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STUDIES IN THE LINGUISTIC SCIENCES

SPECIAL SECTION ON

TOPICS IN RELATIONAL GRAMMAR

Edited by
Jerry Morgan, Georgia Green, and Peter Cole

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TABLE OF CONTENTS

CINEMA-VÉRITE, GOLF-BIJOU AND SANDWICH BEURRE IN CONTEMPORARY FRENCH[1]

Fred M. Jenkins

None of our contemporary grammars, no matter how complete they profess to be, manage to devote much attention to the type of compound represented by the above examples, i.e. one in which we find, simply enough, two nouns in linear sequence. Nevertheless, no sharp observer of present-day French (of all social levels and geographical areas) can fail to notice the rapid increase in the variety and use of these compounds over the past twenty-five years.[2] In view of this situation and of the fact that the last major treatment of French compounds was published some one hundred years ago,[3] it seems advisable to take a new look at the problem, even if we limit our remarks to this one type. I have attempted a classificatory scheme based on the idea of underlying structure, borrowed from generative-transformational grammar; my scheme, though probably not definitive, has the merits of being (1) based upon clear-cut, readily acceptable grammatical terminology, and (2) easily modified, if any of the many examples contained in my discussion have been incorrectly interpreted.[4]

The standard treatments of double-noun compounds recognize, generally, only two major classes: coördinative (chou-fleur) and subordinative (Fête-Dieu).[5] However, if one attempts to relate these compounds and others like them to original sentences from which they may be derived by successive transformations (mainly deletions), one ends up with a much more subtle, detailed and, hopefully, revealing overall picture.

For reasons that will become immediately obvious, I label my first major group -- a very large one -- "Predicate Nominative". Many of these compounds consist of two juxtaposed nouns that are essentially interchangeable, i.e. their relative order could be readily reversed, were it not simply for the influence of tradition, without any serious distortion of meaning or emphasis; they are therefore paraphrased as A est B and B est A. The most prolific group of examples designates professional occupations, or rather the combination of two occupations into one: traducteur-interprète, translator-interpreter; fusilier-mitrailleur, rifleman-machine gunner; secrétaire-trésorier, secretary-treasurer; monteur-ajusteur, assembler-adjuster; cardinal-archevêque, cardinal-archbishop; charron-forgeron, wheelwright-blacksmith; rêveur-lecteur, daydreamer-reader. Since the combination of professional activities is virtually infinite, such compounds are freely formed, constituting an open-ended category: hôtelier-restauranteur, hotel and restaurant owner; peintre-graveur, painter-engraver; horloger-bijoutier, watch repairman-jeweler; reporter-photographe, reporter-photographer; teinturier-dégraisseur, dyer and cleaner; barbier-dentiste, barber and dentist. On this model neologisms are formed from two nouns not usually associated (as barbier-dentiste seems to us today), but since the construction is so transparent, there is no difficulty of comprehension: mathématicien-ministre, mathematician and minister; sénateur-maire, senator and mayor; prince-pilote, prince and pilot; écrivain-paysan, writer and peasant. Occasionally, the two nouns indicate essentially the same profession, but the compound has become a permanent fixture through long use: sellier-bourrelier, saddle and harness maker; magasinier-manutentionnaire, storekeeper; ensemblier-décorateur, interior decorator.

Besides this large category of combined professions, one also frequently finds physical objects fulfilling double functions: <u>chasseur-bombardier</u>, fighter-bomber; <u>réveil-radio</u>, clock radio; <u>moissonneuse-batteuse</u>, harvester-thresher;[6] <u>émetteur-récepteur</u>, two-way radio; <u>tambour-xylophone</u>, drum and xylophone; <u>veilleuse-rechaud</u>, night-light and hotplate. Seemingly impossible combinations may even occur: <u>briquet-fourchette</u>, combination cigarette lighter and fork (from Giraudoux's <u>Apollon de Bellac</u>). Formations designating dual purpose commercial enterprises occur much less frequently than those indicating professions: <u>blanchisserie-teinturerie</u>, laundry and dye works; <u>mégisserie-tannerie</u>, tannery; <u>tôlerie-carrosserie</u>, factory for sheetmetal work and auto-body work. In a very few cases, both nouns again indicate virtually the same type of enterprise: <u>verrerie-cristallerie</u>, glassworks. In a less technical vein we find the familiar <u>café-restaurant</u>, where one can either eat, drink, or do both; <u>théâtre-cave</u>, small theater and nightclub; <u>foire-exposition</u>, fair and exhibition. With this model in mind, one readily understands less frequently encountered formations, even when these are outside the realm of commercial establishments: <u>appartement-atelier</u>, apartment workshop; <u>pénitencier-forteresse</u>, penitentiary-fortress; <u>jardin-terrasse</u>, terrace garden; <u>salon-bibliothèque</u>, sitting room-library.

Beyond these compounds referring to relatively concrete objects, one finds very few others whose components remain completely reversible while referring to more abstract concepts or actions: <u>opposition-concession</u>, simultaneous contrast and concession (a technical grammatical term); <u>vue-perspective</u>, point of view and perspective; <u>enquête-sondage</u>, investigation and sampling; <u>épargne-investissement</u>, savings and investment; <u>course-croisière</u>, boat race and cruise. A few literary genres also fit in here: <u>comédie-ballet</u> and <u>comédie-farce</u>, of obvious meaning.

Directly related to these essentially reversible compounds is another Predicate Nominative subtype in which, however, reversibility does not seem possible, primarily because Noun B is usually more specific than Noun A. These examples are paraphrased only as <u>A</u> est <u>B</u>, the paraphrase <u>B</u> est <u>A</u> being not completely impossible, but much less readily acceptable than with the previous group (in which the order A ÷ B is largely arbitrary). Commonly found in this group are, again, professional occupations: <u>prêtre missionnaire</u>, priest who is a missionary; <u>commis maréyeur</u>, employee who sells fish; <u>artiste-peintre</u>, artist who paints; <u>chirurgien dentiste</u>, oral surgeon; <u>ouvrier maçon</u>, worker who is a mason; <u>ingénieur électricien</u>, electrical engineer; <u>jardinier paysagiste</u>, landscape gardener; <u>peintre théoricien</u>, painter concerned only with theory; <u>soeur infirmière</u>, nun who is a nurse. Sometimes Noun A expresses the individual's primary vocation and Noun B, his temporary or secondary vocation: <u>moine-soldat</u>, monk serving in the army; <u>prêtre-ouvrier</u>, priest working in a factory. The idea of a temporary situation is more frequently encountered when Noun A is either <u>apprenti</u> or <u>élève</u>: <u>apprenti chirurgien</u>, intern surgeon; <u>élève sculpteur</u>, apprentice sculptor. A special problem is represented by the two compounds <u>élève maître</u> and <u>élève maîtresse</u>, both meaning 'student teacher'; ostensibly they are both of the type <u>A</u> est <u>B</u> and <u>B</u> est <u>A</u>. The problem concerns the contrast with <u>maître</u>

élève -- having the opposite order of nouns -- meaning not 'a teacher who is also a student', but rather 'a master student, an excellent student'; due to this loss of reversibility, élève maître(sse) falls only into the A est B subgroup.

This group is also widely represented by compounds whose first noun is femme, because of the lack of separate lexical items in French to indicate that a woman is exercising a given profession; thus: femme-auteur, -ingénieur, -médecin, -officier, -philosophe, -pompier, -soldat. One also finds femme as second noun: médecin femme (=doctor-esse); professeur femme (=professoresse?). Only occasionally do we note other generic nouns in initial position, and then not always as part of an indication of profession: homme poète, man who is a poet; fille mère, unwed mother; fille phénomène, phenomenal girl. Equally infrequent are compounds in which Noun A is an animal whose activities are specified by Noun B; raton crabier, rat that loves to eat crabs; chat souricier, mouse-catching cat. Here too should perhaps be men-tioned the familiar bouc émissaire, scapegoat (literally: goat that is an emissary), though the compound refers to humans alone.

In the realm of inanimates, the construction is quite prevalent, the order remaining general noun + particularizing noun: facteur bruit, noise factor; son consonne, consonant sound; décret loi, decree with the force of a law; état membre, member state; pierre ponce, pumice stone; acte-monologue, act consisting of a monologue; café-brasserie, cafe where beer is served; palais-musée, palace used as a museum; sac-aquarium, (plastic) bag used to transport fish; chiffre record, record number; carrefour piège, dangerous street intersection (literally: intersection that is a trap). The construction is very often encountered in the particularization of types of transportation: navire-câblier, -hôpital, -pétrolier, -voilier, respectively a cable-laying ship, hospital ship, oil tanker, and sailboat; train omnibus, train that stops everywhere; voiture ambulance, car made into an am-bulance. Occasionally, borrowed expressions fit this pattern: match-exhibition, exhibition match; match-retour, return match. By stretch-ing the term "compound" just a bit, one could also include such (poten-tially adverbial) nominals as le vendredi treize (literally: the Fri-day that happens to be the thirteenth day of the month).

A number of examples just given might be more readily paraphrased as A sert de B, were one to take into account the permanent/temporary contrast already illustrated in, for instance, ingénieur électricien and raton crabier -- representing more permanent situations -- vs. élève sculpteur, a student who hopes to become some day a fullfledged sculptor. Although both types of examples can generally be paraphrased as A est B, some compounds fall more naturally into this newer para-phrase, especially when Noun B expresses the temporary situation: classe-pilote, pilot class (of students); banquette-lit, bench that can be used as a bed; appartement modèle, model apartment. The para-phrase readily fits those compounds designating experimental situations: chien-cobaye, dog serving as a guinea pig; pays-laboratoire, country viewed as a huge laboratory; démocratie témoin, democracy serving as a witness; échantillon-test, test sample. French grammatical terminol-ogy also makes generous use of such compounds: langue source, source language; langue cible, target language; nom-sujet and pronom-sujet,

subject noun and pronoun; <u>substantif</u> <u>complément</u>, object noun; <u>verbe</u>
<u>substantif</u>, substantivized verb, i.e. an infinitive.
  A third major subcategory of the Predicate Nominative type is
formed by those examples most readily paraphrased as <u>A</u> <u>ressemble</u> <u>à</u> <u>B</u>;
we are dealing, then, with a metaphorical relationship between the two
nouns. These metaphors commonly indicate some aspect of the physical
qualities associated with Noun B. For instance: <u>chapeau</u> <u>melon</u>, hat
with the shape of a melon (=bowler); <u>manche</u> <u>ballon</u>, sleeve blown up
like a balloon; <u>fauteuil</u> <u>crapaud</u>, squat armchair stuffed like a toad;
<u>homme-sandwich</u>, man between two boards (=sandwich man). This type of
compound frequently designates varieties of fish: <u>poisson-coffre</u>, fish
shaped like a strongbox; <u>poisson-perroquet</u>, fish whose mouth looks like
a parrot's beak; <u>poisson</u> <u>trompette</u>, fish shaped like a trumpet;
or feminine fashions, with Noun A often being the word <u>ligne</u>: <u>ligne</u>
<u>cloche</u>, bell-shaped outline; <u>-haricot</u>, like a string-bean; <u>-tonneau</u>,
like a barrel; <u>-trapèze</u>, like a trapezoid; <u>robe</u> <u>fourreau</u>, sheath
dress; <u>-sac</u>, sack dress; <u>jupe</u> <u>culotte</u>, skirt that looks like pants.
The comparison of form is not always straightforward but may include
some ellipsis of the original nominal; for instance, <u>cordon</u> <u>téléphone</u>
does not literally mean 'an electric cord that looks like a telephone',
but one that has the typical spiral form of a telephone cord (e.g. for
an electric razor); <u>poisson</u> <u>chat</u> is not a fish that looks generally
like a cat, but which has only the whiskers of a cat (cf. also <u>poisson-</u>
<u>épée</u>, swordfish); <u>loupe</u> <u>cyclope</u> means a magnifying glass that is
the size of a cyclops' eye. These particular compounds illustrate
the figure of speech known as synecdoche (the whole standing for
a part).
  Physical form need not be limited just to characteristic outline
but may also refer to size. <u>Monstre</u> is frequently used as Noun B to
designate largeness: <u>repas</u> <u>monstre</u>, huge meal; <u>boeuf</u> <u>monstre</u>, huge ox;
<u>meeting</u> <u>monstre</u>, mass meeting; another possibility is <u>taureau</u>, as in
<u>grenouille</u> <u>taureau</u>, enormous frog. To indicate smallness, there is
the familiar <u>mouche</u>, fly, as in <u>bateau-mouche</u>, excursion boat, and
<u>oiseau-mouche</u>, hummingbird. Occasionally, one finds other nouns:
<u>radio-pilule</u>, radio as small as a pill; <u>golf-bijou</u>, miniature golf.
  A more abstract aspect is that of kinship. Here Noun B is most
frequently <u>mère</u> or <u>soeur</u>: <u>langue</u> <u>mère</u>, language that has given birth
to other languages (not the same as <u>langue</u> <u>maternelle</u>, native lan-
guage); <u>langue</u> <u>soeur</u>, sister language; <u>langue</u> <u>fille</u>, daughter lan-
guage.
  Nouns reminding us of characteristic colors are also widely used:
<u>gants</u> <u>paille</u>, straw-colored gloves; <u>robe</u> <u>puce</u>, flea-colored dress
(i.e. dark reddish-brown); <u>voiture</u> <u>pie</u>, police car painted black and
white (<u>pie</u> = magpie); <u>yeux</u> <u>noisette</u>, eyes of hazelnut color; <u>manteau</u>
<u>sable</u>, coat that is sand-grey or beige; <u>étoffe</u> <u>citron</u>, lemon-colored
cloth. Noun B may indicate not only colors but also the characteristic
distribution of these colors: <u>requin-léopard</u>, shark with black spots
like a leopard's; <u>poisson-bagnard</u>, fish with black and white stripes
like those on a convict's uniform.
  The spatial location of Noun B is sometimes referred to, especial-
ly through the use of <u>étoile</u> and <u>satellite</u>: <u>danseur</u> <u>étoile</u>, star dan-
cer, far above the others; <u>ville</u> <u>satellite</u>, satellite city. Other less

productive formations contain other nouns: <u>unités</u>-<u>croupions</u>, rump units ·(in an army), of low esteem because they lack personnel; <u>pronoms</u>-<u>wagons</u>, pronouns lined up in a row like a string of railroad cars; <u>mot</u>-<u>racine</u>, root word.

Other physical· properties occur much less frequently and are virtually restricted to individual compounds: <u>carton</u>-<u>cuir</u>, cardboard as hard as leather; <u>papier</u> <u>cristal</u>, paper with the transparency of crystal; <u>papier</u> <u>pelure</u>, paper as thin as (onion) peel; <u>haricot</u> <u>beurre</u>, bean with the texture of butter; <u>années</u>-<u>lumière</u>, one's best years, as bright as lights;[7] <u>mot</u>-<u>valise</u>, word ressembling a suitcase, i.e. containing many different meanings.

Almost as frequently represented as these aspects of physical properties are characteristic actions of Noun B; <u>ponton</u>-<u>ascenseur</u>, pontoon that rises and falls with the tide, like an elevator; <u>lettre</u>-<u>bombe</u>, letter whose message is (figuratively) explosive; <u>idée</u>-<u>araignée</u>, idea that envelopes one like a spider spinning his web; <u>serviette</u> <u>éponge</u>, bath-towel that soaks up water like a sponge; <u>image</u>-<u>tremplin</u>, picture or image that acts like a springboard by suggesting new ideas; <u>mot</u>-<u>météore</u>, word that passes by quickly but which may return cyclically, like a meteor; <u>poisson</u>-<u>chirurgien</u>, fish that literally operates on its prey by tearing it apart; <u>voiture</u> <u>balai</u>, car that (figuratively) sweeps up cyclists who have abandoned a race; <u>ville</u>-<u>pieuvre</u>, city that seizes a tourist's imagination, as an octopus latches onto its prey; <u>disque</u>-<u>scie</u>, popular record (literally: record that is played over and over again, reminding one of the monotonous movement of a handsaw). The more frequently expressed types of action include (1) disappearance: <u>gouvernement</u> <u>fantôme</u>, phantom government; <u>poète</u>-<u>comète</u>, poem that is quickly lost sight of; (2) strictly mechanical movement: <u>métro</u>-<u>robot</u>, subway run completely by automation; <u>animal</u>-<u>machine</u>, unthinking animal; <u>formule</u>-<u>réflèxe</u>, fixed expression, uttered without analysis of its component parts; <u>femme</u> <u>automate</u>, unthinking woman; (3) maternal duties: <u>mère</u> <u>poule</u> and <u>mère</u> <u>cigogne</u>, both indicating a mother who fusses over her little ones, as would a hen or stork; (4) ·speed: <u>couvercle</u> <u>éclair</u>, pan cover that slips on as quickly as lightning; <u>avion</u> <u>flèche</u>, airplane appearing to travel as fast as an arrow; <u>ville</u> <u>champignon</u>, city that springs up as fast as a mushroom grows. Related concepts, such as the distance· covered during a certain action, occur only·rarely: <u>oiseau</u> <u>voilier</u>, bird that flies as far as a sailboat·can travel. ·Occasionally two characteristics of Noun B are evoked· simultaneously: <u>homme</u> <u>flèche</u> (from a Parker pen ad) is defined by the ad writer as follows: "C'est l'homme d'un certain style, dynamique, efficace, droit-au-but. Il vise haut, agit vite, signe beaucoup"; both the speed and accuracy of an arrow are implied. These action-oriented compounds .can also be borrowed from another language: <u>homme</u> <u>grenouille</u>, a direct translation of English 'frogman', thus means a man who swims underwater like a frog (but cf.·<u>poisson</u>-<u>grenouille</u>, in which the latter noun refers only to the general physical shape of the fish, not to its ability to swim). Rarely is ellipsis present in these action expressions: <u>fusée</u> <u>gigogne</u>, multi-stage, nesting rocket, is an ellipsis of <u>fusée</u> <u>qui</u> <u>ressemble</u> <u>à</u> <u>la</u> <u>mère</u> <u>Gigogne</u>, the latter meaning 'Old Mother Hubbard' (who stacked all her children into a small space).

The least frequently occurring type of metaphorical compound is one in which Noun B represents much more abstract qualities: <u>homme-rempart</u>, man with the strength of a rampart; <u>écrivain-miroir</u>, writer who reflects others' ideas; <u>ton mouton</u>, submissive tone, worthy of a sheep; <u>cygne-dieu</u>, swan with a god-like quality.

It would be an exaggeration, however, to claim that the above divisions are hard and fast. Some examples could fit into several groups, depending upon the aspect of Noun B that one feels is dominant; thus, <u>roman-fleuve</u>, long, multi-volume novel, demonstrates either (1) action, by its continuous flowing movement, or (2) size (in particular, length), because it goes on for such a long time; <u>roi-soleil</u>, sun king (=Louis XIV), may have either an interpretation (1) of spatial relationship, like that of <u>satellite</u> earlier, i.e. the sun in the center of the universe, or (2) of the physical quality of incandescence, as indicated previously for <u>lumière</u>; <u>papier-parchemin</u> is paper that has both the texture and color of parchment; <u>titre-locomotive</u>, book at the top of the best-seller list, can be looked at either (1) in terms of spatial relationship, since the locomotive is always at the head of the train, or (2) as an action, the locomotive pulling the other less important cars (=books) behind it.

With the two subcategories of Predicate Nominative compounds just discussed -- the <u>A</u> <u>est</u> <u>B</u> and <u>A</u> <u>ressemble</u> <u>à</u> <u>B</u> categories -- it is obvious that Noun B is essentially filling the role of "modifier" of Noun A, a role usually reserved in French for an adjective, prepositional phrase or subordinative clause.[8] In a number of cases it was clear that recourse to Noun B was made simply because of the lack of an appropriate adjective, one semantically close to the noun; or perhaps the creator of the compound wished to avoid using a much longer construction: <u>poisson-perroquet</u>, fish whose mouth looks like a parrot's beak, cannot be shortened in any other way than it has been, because there is no adjective corresponding to <u>perroquet</u>; similarly, <u>chirurgien dentiste</u>, oral surgeon, will never be rivaled by a Noun + Adjective combination because of the lack of something like *<u>dentistique</u>, equivalent to English 'dental'. On the other hand, we find a number of compounds in which Noun B could be readily replaced by already existing adjectives, the major difference being that the end result would be something a bit less "colorful"; thus, <u>oiseau-mouche</u> could be rephrased as <u>tout petit oiseau</u>, <u>cordon téléphone</u> as <u>cordon spiral</u>, <u>roi-soleil</u> as <u>roi très important</u>, and <u>son consonne</u> as <u>son consonantique</u>. It might be worthwhile at this juncture to point out just how widespread this phenomenon is, i.e. how often a fairly appropriate adjective is passed over in favor of a noun. It so happens that the fifteen most commonly used nouns (occurring as Noun B) all have readily available adjectival substitutes, as can be seen in the following examples: <u>musicien amateur</u> (=<u>non-professionnel</u>), amateur musician; <u>main amie</u> (=<u>amicale</u>), friendly hand (as in 'to give one a hand'); <u>écriture artiste</u> (=<u>artistique</u>), artistic handwriting; <u>succès boeuf</u> (=<u>admirable</u>), tremendous success; <u>bureau chef</u> (=<u>principal</u>), main office; <u>argument clé</u> (=<u>principal</u>), key argument; <u>déjeuner éclair</u> (=<u>rapide</u>), quick lunch; <u>femme enfant</u> (=<u>enfantine</u>), childish woman; <u>poisson-femme</u> (=<u>féminine</u>), female fish; <u>conducteur-homme</u> (=<u>masculin</u>), male conductor or driver; <u>film maître</u> (=<u>dominant</u>), master film, and the feminine counterpart, as in <u>bande maîtresse</u>

(=<u>dominante</u>), master channel (of a language tape); <u>embouteillage monstre</u>
(=<u>énorme</u>), tremendous traffic jam; <u>déjeuner</u> <u>snack</u> (=<u>rapide</u>), quick
lunch; <u>situation type</u> (=<u>typique</u>), typical situation; <u>attraction vedette</u>
(=<u>principale</u>), star attraction. Other type B nouns used as adjectival
substitutes occur in a very limited number of compounds: <u>éclaircie-bébé</u>
(=<u>petite</u>), small clearing in the weather; <u>droit</u> <u>canon</u> (=<u>canonique</u>),
canon law; <u>idée-centre</u> (=<u>centrale</u>), central idea; <u>truc</u> <u>canaille</u> (=<u>mépri-</u>
<u>sable</u>), despicable device; <u>voiture-fiction</u> (=<u>fictive</u>), fictitious car;
<u>section</u> <u>grammaire</u> (=<u>grammaticale</u>), grammatical section; <u>ville-mystère</u>
(=<u>mystérieuse</u>), mystery city. Occasionally a borrowed word, occurring
nowhere else in French, is used as Noun B: <u>papier</u> <u>kraft</u> (=<u>fort</u>), strong
wrapping paper. Similarly-formed compounds may appear in contrastive
pairs: <u>voyelle</u> <u>lettre</u> (=<u>écrite</u>, <u>orthographique</u>), written vowel, and
<u>voyelle</u> <u>son</u> (=<u>prononcée</u>, <u>sonore</u>), spoken vowel.

    A very large number of compounds, not yet mentioned, form a com-
pletely open-ended category. These have a proper noun as Noun B:
<u>l'archiduc</u> <u>Otto</u>, archduke Otto; <u>le</u> <u>cap</u> <u>Horn</u>, Cape Horn; <u>disque</u> <u>Philips</u>,
Philips record; <u>salle</u> <u>Tchaïkowski</u>, Tchaïkowsky Hall; <u>la</u> <u>tour</u> <u>Eiffel</u>,
Eiffel Tower; <u>produit</u> <u>Nestlé</u>, Nestlé product; <u>père</u> <u>Noël</u>, Santa Claus;
<u>style</u> <u>Olivetti</u>, Olivetti style (of typewriter). Those compounds indica-
ting titles can of course be paraphrased as <u>A</u> <u>est</u> <u>B</u>, as, generally, can
all examples already discussed in this paper: <u>l'archiduc</u> <u>est</u> <u>Otto</u>, <u>le</u> <u>roi</u>
<u>est</u> <u>Albert</u>, <u>le</u> <u>chancelier</u> <u>est</u> <u>Adenauer</u>, <u>le</u> <u>général</u> <u>est</u> <u>de</u> <u>Gaulle</u>. All
others, however, do not fit this paraphrase, as has been pointed out in
a recent article:[9] one cannot say *<u>la</u> <u>tour</u> <u>est</u> <u>Eiffel</u>, *<u>le</u> <u>produit</u> <u>est</u>
<u>Nestlé</u> or *<u>le</u> <u>cap</u> <u>est</u> <u>Horn</u>, in the sense that this paraphrase would im-
ply identity of physical objects. On the other hand, there is another
paraphrase that is valid for all of these examples: <u>A</u> <u>s'appelle</u> <u>B</u>; thus,
<u>l'archiduc</u> <u>s'appelle</u> <u>Otto</u> and <u>la</u> <u>tour</u> <u>s'appelle</u> (<u>la</u> <u>tour</u>) <u>Eiffel</u>. This
then suggests that the majority of compounds of which Noun B is a proper
noun can still be accommodated within a single subgroup of the Predicate
Nominative type. As will be seen later, a small number of examples fall
into some other major categories (e.g. <u>modèle</u> <u>Dior</u>, paraphrased as <u>Dior</u>
<u>a</u> <u>un</u> <u>modèle</u>). Infrequently, a compound without a proper noun may still
fit the paraphrase <u>A</u> <u>s'appelle</u> <u>B</u>: <u>le</u> <u>mot</u> "<u>discipline</u>", the word "disci-
pline"; <u>une</u> <u>poire</u> <u>duchesse</u>, duchess pear; <u>la</u> <u>préoccupation</u> "<u>artiste</u>",
the preoccupation called "being an artist".[10]

    Another very large, virtually open-ended group of examples seems
once again to fit into the Predicate Nominative type, but I am going to
suggest that its underlying paraphrase be not <u>A</u> <u>est</u> <u>B</u>, but rather <u>A</u> <u>qui</u>
<u>B</u>, in which B is a verb from which Noun B is ultimately derived. Thus,
<u>navire</u> <u>abordeur</u>, boarding ship, can most certainly be paraphrased as
<u>le</u> <u>navire</u> <u>est</u> <u>un</u> <u>abordeur</u>, the ship is the boarding kind, but can more
revealingly be paraphrased as <u>le</u> <u>navire</u> (<u>qui</u>) <u>aborde</u> (<u>un</u> <u>autre</u>), the ship
(that) comes alongside (another); similarly, <u>poisson-cracheur</u>, spitting
fish, can be paraphrased as <u>le</u> <u>poisson</u> <u>est</u> <u>un</u> <u>cracheur</u>, the fish is a
spitter, but also as <u>le</u> <u>poisson</u> <u>crache</u>, the fish spits. The possibili-
ties for Noun B seem endless, since the inventory of verbs is never
closed and many verbs can add the agentive suffix -<u>eur</u>. Of course, it
can also be argued that such derivatives are adjectives rather than
nouns;[11] dictionaries often give them the double label "noun-adjectives",
and a number of them vary for gender, just like most adjectives: <u>poule</u>

pondeuse (cf. pondre, to lay), laying hen; infirmière visiteuse (cf. visiter, to visit), visiting nurse; antenne réceptrice (cf. recevoir, to receive), receiving antenna; seringue injectrice (cf. injecter, to inject), injecting syringe. Whether or not these forms in -eur, -euse, -rice are nouns is relatively unimportant if one's interest lies simply in deriving such compounds from underlying structures. Some of the more frequently occurring examples of Noun B ending in -eur are illustrated in the following compounds: oiseau chanteur, songbird; travail créateur, creative work; peintre-décorateur, decorative painter; principe directeur, guiding principle; bateau drageur, dredging boat; sergent instructeur, sergeant who teaches; tube injecteur, injecting tube; raton laveur, raccoon; poisson migrateur, migrating fish; oeil observateur, observant eye; martin-pêcheur, kingfisher; mixer-plongeur, kitchen beater; sourire protecteur, protective smile; juge rapporteur, judge advocate; avion remorqueur, towing plane; esprit rêveur, dreamy mind; vedette torpilleur, torpedo boat; derviche tourneur, whirling dervish; pont transbordeur, transporter bridge; athlète vainqueur, conquering athlete; bouchon-verseur, plug through which liquid can be poured; commis voyageur, traveling salesman.

The possibilities for Noun B are by no means limited to those forms ending in -eur or its feminine equivalents. A small number end in -oir, as in casque séchoir (cf. sécher, to dry), hair dryer, or bateau lavoir (cf. laver, to wash), boat used to wash something. A much larger number of compounds with less widely used suffixes (or else completely unsuffixed) are still readily derived from underlying verbs: papier buvard (cf. boire, to drink), blotting paper; avocat-conseil (cf. conseiller, to advise), lawyer who gives advice; opération-débarras (cf. débarrasser, to get rid of), operation that gets rid of something; lampe-éclair (cf. éclairer, to illuminate), flashbulb;[12] homme-écrivain (cf. écrire, to write), writer; satellite-espion (cf. épier, to spy), spy satellite; ange gardien (cf. garder, to watch over), guardian angel; nombre-indice (cf. indiquer, to indicate), guide number, tour relais (cf. relayer, to relay), relay tower; borne repère (cf. repérer, to make a reference mark), reference stone; pendulette-réveil (cf. réveiller, to wake up), small alarm clock; mot-rime (cf. rimer, to rhyme), rhyming word; couteau-scie (cf. scier, to saw), sawtoothed knife; ballon-sonde (cf. sonder, to take a sounding), sounding balloon; colis-surprise (cf. surprendre, to surprise), surprise package.

These remarks terminate the presentation and discussion of the various subtypes coming under the general heading of Predicate Nominative compounds. It only remains to be pointed out, once again, that the subcategories are by no means air-tight, since many examples can be simultaneously paraphrased in two, and sometimes three, different ways. The problem always stems from the interpretation of Noun B: thus, is malle-armoire, steamer trunk, to be paraphrased as A est B, the trunk is a closet, or as A ressemble à B, trunk that looks like a (real) closet, or as A sert de B, trunk serving (temporarily) as a closet? Is cabinet-bibliothèque an office that contains a library (A est B), or an office that functions simultaneously as a library (A est B, B est A)? Does oeil-caméra mean that one's eye functions optically like a camera (A ressemble à B), or that it literally is a camera, in that it records images (A est B, B est A)? And it has already been noted that those com-

pounds in which Noun B carries an -eur suffix can be interpreted either as A est B, B est A, or as A qui B (B=verb); thus, président-directeur is either le président est (aussi) le directeur or le président (qui) dirige. Other verb-derived compounds are in reality just as ambiguous: groupe témoin could be from le groupe (qui) témoigne, group that testifies, or, more simply, from le groupe est un témoin, the group is a witness, and even from le groupe sert de témoin, the group functions (temporarily) as a witness. The choice of underlying structure will undoubtedly be based on considerations of simplicity: which paraphrase yields the desired compound with the minimum of rules, given all the other structures that we must also account for in French?

There are a number of compounds that appear, at least superficially, to fit into the A qui B type just discussed; e.g. digue-promenade, in which Noun B is obviously derived from (se) promener, to stroll; bouton-pressoir, wherein poussoir comes from pousser, to push; or papier-calque, from calquer, to trace. A little reflection, however, tells us that we are no longer dealing with a subject ÷ verb relationship: digue-promenade cannot be paraphrased as *la digue se promène, but only as digue où on se promène, or, more deeply, as on se promène sur cette digue, i.e. Noun B is still essentially a verb, but Noun A derives from an adverbial complement of place. Similarly, bouton-pressoir ultimately derives from on pousse le bouton, since it means 'the button that locks a door handle when it is pushed in' (i.e. a direct object ÷ verb relationship). On the other hand, papier-calque, tracing paper, is like digue-promenade in that it too ultimately derives from a sentence in which papier is a complement and calque, a verb: on calque à l'aide de ce papier/sur ce papier. Our second major category of compounds, therefore, turns out to originate in just such types of full sentences, i.e. we are no longer dealing with the Predicate Nominative group in which the deleted verbs are être, ressembler à, servir de, but rather with other verbs taking direct, oblique, or adverbial complements, these complements being drawn from either Noun A (as with digue, above), Noun B, or both simultaneously.

One of the most productive subtypes of this general group shows a Subject ÷ Direct Object relationship, the underlying verb having been deleted from the resulting compound. This verb seems to be most often simply avoir, to have or possess, or contenir, to contain; thus, camion-remorque, trailer truck; bout-filtre, filtertip; bateau-citerne, tanker;[13] baleine-bosse, humpbacked whale; wagon-lit, Pullman car; disque microsillon, LP record (literally: record having microgrooves); montre-bracelet, wristwatch (literally: watch having a band); sauce mayonnaise, sauce containing mayonnaise; auto mitrailleuse, car armed with a machine gun; poche revolver, hip pocket (literally: pocket in which one puts a revolver); station radar, radar station; avion monoplace, single-seat airplane; hôtel-restaurant, hotel containing a restaurant; stylo bille, ballpoint pen; papier émeri, emery paper; complet veston, suit with a vest; flacon stilligoutte, bottle with eyedropper; photo couleur, color photo; sandwich beurre, sandwich containing butter; voiture-radio, car with a radio. As can be seen from a few of the English glosses, an intermediate stage in the syntactic derivation of this group of compounds would most likely contain the preposition avec, with: camion (avec) remorque, hôtel (avec) restaurant, fla-

con (avec) stilligoutte, etc.; a few, however, might be paraphrased
with other prepositions: tapis (à) fleurs, rug with flower design;
stylo (à) bille, ballpoint pen; photo (en) couleurs, color photo; ro-
man (en) feuilleton, serial novel; poste (de) radio, radio set.
The origin of Darmsteter's "composés par ellipse de la préposition",
then, becomes clear; our only objection to this label is that it does
not reveal very deep relationships for the compounds in question, e.g.
poche (pour) revolver is certainly a correct paraphrase, but cette poche
pourrait contenir un revolver demonstrates a more fundamental grammati-
cal relationship.[14]

Other verbs utilized for the Subject ÷ Direct Object relationship
occur much more rarely. S'occuper de, to take care of: service biberon,
babysitting service (literally: service that takes care of baby bottles);
ingénieur radio, radio engineer; donner, to give: coiffeur-conseil,
hairstyle consultant;[15] ingénieur-conseil, consulting engineer; pro-
duire, to produce: firme automobile, automobile firm; chêne-liège,
cork tree (literally: oak tree that produces cork); appareil-photo,
camera; barrage-réservoir, dam forming a reservoir; bande-son, sound-
track; chocolat-fraîcheur, candy that refreshes; permettre, to permit:
timbre-escompte, stamp allowing a discount; match-revanche, revenge
match; simuler, to simulate: courbe-profit, profit curve (on a graph);
cinéma-vérité, film purporting to reproduce natural situations; homme-
orchestre, one-man band; transporter, to carry: bateau pilote, pilot
boat; paquebot poste, mail boat; porter, to wear: homme-pull, man who
habitually wears a sweater; jouer, to play: lion farceur, lion who
plays jokes; marquer, to mark: poteau frontière, stone marking a border;
suivre, to follow: droit canon, canon law; obtenir, to obtain: opération
terrains, operation concerned with buying land; éteindre, to extinguish:
bateau feu, fireboat. Many of these other verbs occur in only one or
two Subject ÷ Direct Object compounds, and, in the interest of simpli-
city, it would be worthwhile to eliminate as many of these "specialized"
verbs as possible through alternate paraphrasing. Very occasionally
Noun B does not represent the direct object of the verb whose subject
is Noun A; thus, esprit pilule means 'a state of mind that tempts one
to take a lot of pills'; such highly elliptical compounds are rarely un-
derstood outside of the particularly narrow contexts in which they are
encountered.

Another fairly large group has Noun A as Direct Object and Noun B
as Subject of the underlying sentence, i.e. just the opposite order of
the preceding group. Once again, the verb that appears to be deleted
the most frequently is avoir (in the sense of posséder): apprenti sor-
cier, sorcerer's apprentice; ouvrier boulanger, journeyman baker; mé-
canicien-dentiste, dentist's assistant who makes prosthetic devices;[16]
arrière-main, back of the hand; confort avion, comfort of a plane; ton
philosophe, philosophical tone; programme radio, radio program; couleur
tabac, tobacco color; vaisseau amiral, flagship; grandeur nature, natu-
ral size; recette maison, chef's private recipe; univers-espace, the uni-
verse of space. Occasionally Noun B is a proper noun indicating pos-
session by an existing person, not just serving as an identifying label,
as in previous examples (e.g. la tour Eiffel, l'archiduc Otto, produit
Nestlé): procès Ruby, Ruby's trial; modèle Dior, dress made by Dior or
by Dior's establishment; gouvernement Pétain, Pétain's government;

Fête-Dieu, religious festival honoring God. A few normally adverbial expressions may also fit this paraphrase: début juillet, the beginning of July; fin janvier, the end of January. Other deleted verbs occur rather rarely: contenir, to contain: laboratoire-satellite, satellite laboratory; usine-bateau, factory located in a boat; créer, to create: tissu mode, fashionable material; papier joseph, filter paper used by chemists and invented by a man named Joseph; poésie-magie, poetry produced by magic rather than intellectual endeavor; chevaux-vapeur, horsepower (literally: created by steam); indiquer, to indicate: saisie-brandon, legal term meaning, literally, seizure of crops, signaled (at least formerly) by a lighted torch; apporter, to bring: camembert-avion, camembert cheese flown in by plane; choisir, to choose; époux-robot, husband chosen by computer.

As an intermediate stage of derivation, many of the above examples could be represented without a verb but with the semantically ambiguous preposition de: poésie (de) magie, fin (de) janvier, modèle (de) Dior, ton (de) philosophe, arrière (de la) main, apprenti (d'un) sorcier; a few, possibly with other prepositions: lit (dans un) placard, usine (dans un) bateau, Fête (pour) Dieu, antenne (pour le) radar. An occasional example remains ambiguous as to origin, e.g. does un camp scout, scout camp, originate in ce camp contient des scouts (Subject ÷ Direct Object), or in les scouts possèdent un camp (Direct Object ÷ Subject)?; an intermediate stage of derivation, such as camp (pour les) scouts, deliberately avoids such decisions, pointing out, incidentally, the weaknesses inherent in Darmsteter's second category of compounds.

In the next most prolific type, Noun A appears as the Direct Object of the underlying sentence, while Noun B is an Adverbial Complement of the main verb that is ultimately to be deleted: thus, malle-cabine (literally: cabin trunk) originates in the sentence on utilise cette malle dans une cabine, with intermediate stages of derivation being perhaps malle qu'on utilise dans une cabine and malle pour cabine. The most frequently deleted verb appears to be trouver, to find: province frontière, border province;[17] pôle sud, south pole; timbre-poste, postage stamp (literally: the kind of stamp that one finds at the postoffice); festival Merville, festival at Merville; cas limite, borderline case; solution cadeau, gift solution; type jungle, jungle-like type; notes inter-articles, notes spread throughout several articles (note the explicitly stated preposition introducing the complement, a rare phenomenon). Next in frequency is faire, to do or make: bas nylon, nylon stocking; poignée cuivre, brass handle; test chandail, sweater test; carton paille, cardboard made from straw; kilomètres-heure, kilometers per hour; saisie-arrêt, seizure of goods based on a legal judgment. Utiliser, to use, is next in frequency: timbre-prime, stamp used to get a bonus; épargne-logement, savings used to buy lodging; vêtements sport, sport clothes; lampe tempête, storm lamp. Also occurring with utiliser are most of those compounds in which a preposition is overtly expressed (cf. notes inter-articles, supra): canon anti-char, anti-tank gun; chaise antimensonge, lie-detector chair (literally: chair used against lies); canon paragrêle, cannon used to prevent the formation of hail. All other verbs are of very limited occurrence; établir, to establish: étalon or, gold standard; réserves-dollars, dollar reserves; escadrille-suicide, suicide squadron; envoyer,

to send: <u>colis</u> "<u>prisonnier</u>", package to be sent to a prisoner; <u>abonne-ment</u>-<u>poste</u>, subscription sent by mail; <u>préparer</u>, to prepare: <u>pommes vapeur</u>, steamed potatoes; <u>boeuf</u>-<u>mode</u>, beef prepared in a fashionable way; <u>entrecôte minute</u>, minute steak; <u>lier</u>, to link: <u>écouteurs</u>-<u>micro-phones</u>, audio-active earphones (i.e. earphones linked to microphones); <u>prendre</u>, to eat: <u>dîner</u>-<u>TV</u>, TV dinner. Intermediate stages of deriva-tion would show prepositional phrases introduced by a variety of pre-positions; often, <u>de</u>: <u>test</u> (<u>de</u>) <u>chandail</u>, <u>vêtements</u> (<u>de</u>) <u>sport</u>, <u>bas</u> (<u>de</u>) <u>nylon</u>; but also <u>à</u>: <u>festival</u> (<u>à</u>) <u>Merville</u>, <u>province</u> (<u>à la</u>) <u>fron-tière</u>, <u>boeuf</u> (<u>à la</u>) <u>mode</u>, <u>kilomètres</u> (<u>à l'</u>) <u>heure</u>; and a few less fre-quent ones: <u>colis</u> (<u>pour un</u>) <u>prisonnier</u>, <u>valeur</u> (<u>en</u>) <u>or</u>; <u>saisie</u> (<u>par</u>) <u>arrêt</u>; <u>festival</u> (<u>dans un</u>) <u>bar</u>. The underlying verb is not always clear-cut: <u>idée cadeau</u>, idea for a gift, could be paraphrased with two dif-ferent verbs -- <u>on utilise cette idée pour un cadeau</u>, <u>on trouve cette idée pour un cadeau</u>; nevertheless, the Direct Object ÷ Complement re-lationship remains the same. Perhaps a bit more disconcerting than this is the possibility of alternative paraphrasing for a number of compounds which, at first sight, seem to fit only into the Direct Ob-ject ÷ Complement category; thus, <u>côté public</u>, the side (of a stage) located next to the audience, can be paraphrased either as <u>on trouve ce côté près du public</u>, or as <u>on trouve le public de ce côté-ci</u> (in the latter case, Noun A is now part of the Complement, and Noun B, the Direct Object, i.e. just the opposite of the previous order). In similar fashion, <u>canon</u>-<u>char</u>, cannon on a tank, can be either Direct Object ÷ Complement, as above, or Direct Object ÷ Subject, as in the conceivable paraphrase <u>le char a ce canon</u>. And is <u>plateau</u>-<u>dîner</u> to be paraphrased as <u>on utilise ce plateau pour le dîner</u> or as <u>on met le dîner sur ce plateau</u>? The choice of paraphrase, fortunately, is not really so crucial. The desired compound can still be obtained, because there are other compounds that must be accounted for syntactically using either one or the other reduction rule; for instance, we have al-ready seen that the surface order of Direct Object ÷ Subject fits a very large number of examples that cannot be accounted for in any other way (e.g. <u>époux robot</u> = <u>un robot choisit l'époux</u>). Additionally, we shall see next some compounds that seem to be only Complement + Direct Object in surface structure, similar to one analysis of <u>côté public</u>, above.

Compounds reflecting the surface order Complement ÷ Direct Object are relatively few in number. Their spontaneous paraphrases again in-clude most of the all-purpose, polysemous verbs of French, such as <u>faire</u>, to do or make: <u>soirée</u>-<u>débat</u>, debate carried on in an evening session; <u>station</u>-<u>cueillette</u>, central location where fruit pickers leave their loads; <u>camp</u>-<u>croisière</u>, camp from which cruises begin; <u>prendre</u>, to take: <u>pause</u>-<u>café</u>, coffee break; <u>étape</u>-<u>repas</u>, a stop where one eats; <u>coin apéritif</u>, corner in which one drinks one's apéritif; <u>utiliser</u>, to use: <u>zone dollar</u>, zone where dollars are the currency; <u>style sub-stantif</u>, style overloaded with nouns; <u>peinture or</u>, gold painting. Other more specific verbs occur only sporadically; <u>donner</u>, to give: <u>station</u>-<u>service</u>, service station; <u>préparer</u>, to prepare: <u>tapis</u>-<u>fleurs</u>, plastic cloth on which cut flowers are prepared;[18] <u>acheter</u>, to buy: <u>chèque</u>-<u>essence</u>, certificate with which one buys gas; <u>bar tabac</u>, bar where one buys tobacco. Once again, the choice of verb is not par-

ticularly crucial; for instance, the last example could also be paraphrased as <u>on</u> <u>vend</u> <u>du</u> <u>tabac</u> <u>dans</u> <u>ce</u> <u>bar</u>, were one to take a slightly different point of view.

Noun A may sometimes be Subject, and Noun B, part of the Complement. No particular verb is especially prevalent in underlying structure: <u>vol-suicide</u>, suicidal flight (<u>le</u> <u>vol</u> <u>se</u> <u>termine</u> <u>en</u> <u>suicide</u>); <u>location-vente</u>, rent-buy contract (<u>la</u> <u>location</u> <u>se</u> <u>termine</u> <u>en</u> <u>vente</u>); <u>autorail</u>, self-propelled railroad car (<u>l'auto</u> <u>marche</u> <u>sur</u> <u>les</u> <u>rails</u>); <u>abrivent</u>, windbreak (<u>l'abri</u> <u>vous</u> <u>protège</u> <u>contre</u> <u>le</u> <u>vent</u>). Occurring almost as frequently are compounds in which Noun A is still the Subject of the underlying verb, as above, but Noun B is no longer a verb Complement -- it becomes rather a Modifier or Complement of a deleted Direct Object. Thus, <u>maison</u> <u>Régence</u>, house of the Regency style, is incorrectly paraphrased as <u>une</u> <u>maison</u> <u>qui</u> <u>appartient</u> <u>à</u> <u>la</u> <u>Régence</u> (since it may have been built later than this period), but suggests rather <u>une</u> <u>maison</u> <u>qui</u> <u>ressemble</u> <u>à</u> <u>celles</u> <u>construite</u> <u>pendant</u> <u>la</u> <u>Régence</u>; <u>Régence</u>, then, is part of a Complement of <u>celles</u>, not of <u>ressembler</u>. Here are other examples in which the Direct Object seems to have been entirely deleted: <u>récepteur</u> <u>couleur</u>, color-TV set (<u>le</u> <u>récepteur</u> <u>a</u> <u>des</u> <u>images</u> <u>en</u> <u>couleur</u>); <u>bec</u> <u>papillon</u>, gas burner producing a flame shaped like butterfly's wings; <u>coupon-réponse</u>, stamp coupon (<u>coupon</u> <u>qui</u> <u>permet</u> <u>d'acheter</u> <u>un</u> <u>timbre</u> <u>destiné</u> <u>à</u> <u>la</u> <u>lettre</u> <u>de</u> <u>réponse</u>); <u>liste-valise</u>, list of items to be put in a suitcase (<u>liste</u> <u>qui</u> <u>indique</u> <u>les</u> <u>objets</u> <u>à</u> <u>mettre</u> <u>dans</u> <u>une</u> <u>valise</u>).

The reverse of the above examples, Complement + Subject, seems virtually non-existent. A somewhat weak candidate for this relationship is <u>avion-suicide</u>, suicide plane (<u>une</u> <u>suicide</u> <u>se</u> <u>passera</u> <u>dans</u> <u>cet</u> <u>avion</u>). It would be preferable to bypass this relationship, but this can be done only if another reasonable paraphrase can be found. For the compound in question it might be possible to substitute a Complement + Verb type paraphrase, which we have seen previously in <u>digue-promenade</u> (<u>on</u> <u>se</u> <u>promène</u> <u>sur</u> <u>cette</u> <u>digue</u>), <u>papier</u> <u>calque</u> (<u>on</u> <u>calque</u> <u>à</u> <u>l'aide</u> <u>de</u> <u>ce</u> <u>papier</u>), and <u>course-poursuite</u> (<u>on</u> <u>poursuit</u> <u>dans</u> <u>cette</u> <u>course</u>). Similarly, <u>avion-suicide</u> would be a reduction of <u>on</u> <u>se</u> <u>suicide</u> <u>dans</u> <u>cet</u> <u>avion</u>, or even of <u>on</u> <u>utilise</u> <u>cet</u> <u>avion</u> <u>pour</u> <u>une</u> <u>suicide</u> (Direct Object + Complement).

Turning now to the Verb + Direct Object pattern, we find that it is already thoroughly exploited in French, forming a very familiar category of compounds: <u>compte-gouttes</u>, eyedropper (<u>quelque</u> <u>chose</u> <u>qui</u> <u>compte</u> <u>les</u> <u>gouttes</u>); <u>ramasse-miettes</u>, crumb scoop (<u>qqch.</u> <u>qui</u> <u>ramasse</u> <u>les</u> <u>miettes</u>); <u>porte-avions</u>, aircraft carrier; <u>pousse-café</u>, after-dinner liqueur; <u>vide-citron</u>, lemon squeezer; <u>coupe-gorge</u>, cutthroat (den); and so forth. In these particular examples, the verb base used in initial position can never be interpreted as a noun; therefore, these compounds do not consist in any sense of Noun + Noun. However, we have already seen that many nouns are directly derivable from verbs by suffixation, e.g. <u>promenade</u> from (<u>se</u>) <u>promener</u>, <u>indice</u> from <u>indiquer</u>, <u>directeur</u> from <u>diriger</u>, and that these nouns occur in compounds analyzed as Subject + Verb, e.g. <u>nombre- indice</u> = <u>nombre</u> (<u>qui</u>) <u>indique</u>. With a similar analysis of some other nouns -- namely <u>aide</u>, <u>assurance</u>, and <u>garantie</u> -- we can a few more examples to our vast list of Verb + Direct Object compounds. Thus, <u>aide-maçon</u>, ostensibly Direct Object + Subject (<u>le</u> <u>ma-</u>

çon a un aide, then aide d'un maçon), could conceivably be paraphrased as quelqu'un qui aide un maçon.[19] Similarly, assurance-auto, car insurance, is derivable from on assure l'auto (cf. also assurance-crédit, -maladie, -soleil, -vie, -vieillesse), and garantie-automobile from on garantit l'auto.

Compounds representing Direct Object ÷ Verb, the opposite order of the group above, are, again, virtually non-existent. I have found only photo-montage, photo mounting (on monte des photos).

All of the double-noun compounds considered up to now have appeared to consist of (at least in surface structure) headword ÷ modifier, and, in fact, this is the way a traditional grammarian would describe them: traducteur-interprète, translator who is an interpreter (A est B, B est A); prêtre-ouvrier, priest who is a worker (A est B); banquette-lit, bench used as a bed (A sert de B); robe fourreau, sheath dress (A ressemble à B); produit Nestlé, Nestlé product (A s'appelle B); oiseau chanteur, songbird (A qui B); baleine bosse, humpbacked whale (A possède B); ton philosophe, philosophical tone (B possède A); malle-cabine cabin trunk (A dans B), and so on. In a number of the types derived from sentences containing Objects and Complements we were obliged to supply a Subject for the Verb, since the Subject did not overtly appear in the compound itself (bar-tabac = on achète du tabac dans ce bar). But, by and large, all of these compounds can be roughly reduced to headword ÷ modifier, provided one gives a very generous interpretation to the latter term.

There are, however, still other possibilities in French; in a relatively limited number of cases the headword of the original formation appears to be missing, that is, we are dealing with examples of the trope called, in literary terminology, metonomy, and in grammatical terminology, exocentricity. Noun A and Noun B may represent coördinate physical objects, as in un "viande-légumes", babyfood consisting of mixed meat and vegetables; sud-est, southeast (point de l'horizon situé entre le sud et l'est); friction-shampooing, shampoo liquid (produit qui donne l'effet d'une friction et qui s'utilise pour un shampooing); Paris-Orléans (route qui va de Paris à Orléans); janvier-mars (partie de l'année qui comprend janvier, février et mars); philo sciences, philosophy and science (classe où on s'occupe de philosophie et de sciences); dialogue-monologue (présentation qui est en partie un dialogue et en partie un monologue); point-virgule, semicolon (signe de ponctuation qui consiste en un point et une virgule); radio-électricité (magasin où on vend des radios et des appareils électriques). On the other hand there are similar compounds in which Noun B is ostensibly the modifier of Noun A: malle-poste, mail coach (literally: postoffice trunk) (voiture qui transporte la malle de la poste); reine claude, kind of plum (prune qui s'appelle 'reine claude'); le "Poule Couveuse", rock formation (rocher qui ressemble à une poule qui pond). Rules to account for these compounds would undoubtedly be more complex than those needed to create any of the endocentric types; not only must they take care of the ellipsis of the original headword, but they must also account for some entirely new grammatical relationships (e.g. in un "viande-légumes", an ellipsis of boîte de conserves qui contient de la viande et des légumes, or of on met de la viande et des légumes dans cette boîte, both viande and

légumes are Direct Objects, not a combination like Subject + Object, or
Object ÷ Complement, and so forth). Fortunately, such highly elliptical
compounds are in the minority in French.

. Another fairly limited group of examples shows yet another possible
relationship between the two Nouns: modifier ÷ headword, instead of
the more frequently encountered headword ÷ modifier. Looking more
deeply into their structure, we note, happily, that all of them fit
into categories previously outlined. Among the most frequently used
modifiers manifested as Noun A, we find maître, master or principal;
the combinations of maître ÷ Noun B are virtually endless, as the fol-
lowing examples show: maître-argument, -artisan, -autel, -calfat,
-chanteur, -chou, -clerc, -compagnon, -coq, -couple, -cuisinier,
-écailler, -financier, -filou, -fripon, -fruitier, -garçon, -homme,
-imprimeur, -jour, -livre, -maçon, -mot, -verrier, -voilier. All of
these examples are similar to the A est B type already described,
e.g. cet autel est le maître (autel), except that the order is reversed:
B est A. Maître also has a feminine counterpart used to modify feminine
nouns: maîtresse branche, -condition, -femme, -pièce, -poutre, -section.
Second in frequency within the B est A type are compounds having chef,
chief or principal, as Noun A: chef-lieu, -machiniste, -mécanicien,
-mitrailleur, -monteur, -scout, and so on. The lexical item bébé, baby,
usually occurs with animal names: bébé léopard, -lion, -tigre, -hippo-
potame; however, when it occurs with inanimates, it falls into the res-
sembler type: bébé lune, tiny moon or satellite; bébé typhon, small ty-
phoon. Other possibilities with ressembler include mère abbesse, mother
abbess, mère prieure, mother prioress, and traîtres yeux, treacherous
eyes. Representing s'appeler is only zéro degré, the degree named 'zero'.
From sentences containing Objects or Complements there are a few com-
pounds representing the underlying structure Direct Object ÷ Subject:
fréquencemètre, frequency meter (ce mètre indique la fréquence); verbo-
manie, verbosity (cette manie utilise beaucoup de verbes, i.e. mots).
If one accepts the lexical item arrière, back or behind, as a noun,
then the Complement ÷ Subject type is amply represented: arrière-bec,
downstream cutwater (le bec est à l'arrière du pont), -pensée, -plan,
and so forth; if not, then one is left with the single example radio-
reporter, reporter on the radio (ce reporter travaille à la radio).
Other relationships are rather feebly represented; Complement ÷ Direct
Object: vélo-polo, bicycle polo (on joue au polo sur des vélos); ciné-
roman, novel drawn from a screenplay (on tire le roman du cinéma);
panier-repas, picnic lunch (on met le repas dans un panier); papier-
mouchoir, Kleenex (on fait ce mouchoir de papier); radio-reportage,
radio report (on fait ce reportage à la radio); radio journal, news re-
port on the radio (on donne ce journal à la radio); Direct Object ÷
Complement: voiture école, driving school (on apprend à conduire
une voiture à cette école); auto-gare, garage for cars (on laisse
les autos dans cette gare); Complement + Verb: radio-diffusion, radio
broadcasting (on diffuse qqch. à la radio); radio-navigation, radio
navigation (on navigue à l'aide d'une radio).

A legitimate question arises about all of the above examples:
How many of these modifier ÷ head compounds are simply the result of
the borrowing of this syntactic order from other languages, in parti-
cular, English? The question can be answered very simply, in each case,

through etymological investigation; however, from the point of view of the average French speaker, it is difficult to draw a firm line between borrowed expressions and native French expressions, just as no firm line can be drawn between absolutely transparent compounds of other types (e.g. porte-avions, chef d'oeuvre) and those that are analyzable only from the historical point of view (maintenant, pomme de terre, tout de suite). Yet some double-noun compounds are inescapably borrowed, since they have kept the same spelling and meaning as their source: test-match, yacht-club, water closet, music-hall, snow-boot, recordman, radiogramme, snack-bar, taxi-girl, électron-volt, science-fiction. Others are complete or partial loan translations: année-lumière, light-year (to be distinguished from its previously mentioned meaning, 'important year'); auto-assurance, car insurance (the order assurance auto has been noted previously); autoroute, freeway (calque from Italian); disque-jockey, disc jockey; élève infirmière, student nurse (an alternate analysis is, as previously indicated, A est B); fourmi-lion, ant lion (directly from Latin); livre club, book club; quartier-maître, quartermaster (from German); radio-activité, radioactivity; reine-mère, queen mother; surprise-partie, party with dancing; tambour major, drum major. The only general conclusion that we can reach is that those compounds containing frequently encountered nouns in initial position are undoubtedly better assimilated and more "French" than isolated examples like tambour major; at a minimum, we would include among "true" modifier + head compounds those that begin with maître, chef, and perhaps bébé. But whatever line is drawn, we can still account for all of them (whether "French" or not) with the same syntactic rules.

A small number of compounds have been omitted from all of the categories already outlined because they are essentially unanalyzable by the majority of speakers of contemporary French (i.e. they are similar to maintenant and tout de suite). Some of these are legal terms containing a noun that bears little semantic relation to the compound's present meaning: saisie-gagerie, supplementary attachment of household goods. Examples from different domains are loup-garou, werewolf (garou occurs only in this formation today) and potron-jaquet or potron-minet, both meaning 'dawn' (neither potron nor jaquet have ostensible meaning today).

What is the outlook for all these different types of compounds with regard to the future? Judging from past performance, I think that we can safely predict that those which show the minimum of ellipsis will continue to form ever-expanding inventories. Thus, jardin terrasse, terrace garden, and receveur-percepteur, tax collector, are easily understood, even outside of context, because only avoir or être have been elided; equally simple are such compounds as le général de Gaulle and oiseau migrateur, migrating bird, in which we have lost only s'appeler, in the first case, and have added an adjectival suffix to a visible verb base in the second. However, a compound like chèque-essence, certificate with which one buys gas (from on achète de l'essence avec ce chèque, Complement + Direct Object), is not nearly as transparent, even in context; it might be meaningful only to those people having regular contact with such certificates, while to others

it might suggest, for example, 'check that one receives for buying gas', or, somewhat more far-fetched, 'perfumed check' (this meaning formed on analogy with the frequently occurring type A est B. Similarly, bouée correspondance, buoy having a watertight compartment to store messages (on utilise cette bouée pour la correspondance, Direct Object + Complement) could be interpreted by some French speakers as 'a buoy referred to in a letter' (on mentionne cette bouée dans la correspondance, still Direct Object + Complement, but with a different verb and type of complement), or as 'a buoy joined to two other objects' (cette bouée fait la correspondance entre Y et Z, Subject + Direct Object). Even with simpler ellipsis, problems may arise: Does carton-pierre mean 'cardboard as hard as a rock' (A ressemble à B, texture) or 'cardboard that looks like a rock' (A ressemble à B, shape)?[20] Of course, such problems are not limited to French; for someone unfamiliar with the entire gamut of similar English compounds, there is no way to predict accurately what has been deleted (e.g. bedbug does not mean 'a bug that steals beds' on analogy with car thief[21]). Likewise, in French, matelas puce could conceivably be 'a flea-colored mattress' (A ressemble à B, color), or 'a mattress infested with fleas' (B se trouve dans A, Direct Object + Subject), since both types of compounds do exist. I myself have been unable to obtain the correct interpretation of a number of compounds, despite my familiarity with some 1500 such examples in French: papier brouillard, unfinished type of paper (does brouillard refer to texture or color?); poisson papillon, (literally) butterfly fish (does papillon refer to shape, movement, or color?); opération-vacances, (literally) vacation operation (does vacances stand in an adverbial relationship introduced by pendant, during, or pour, destined for?). The epitome of this type of ambiguity is represented by an advertisement in an issue of Paris-Match of a few years back. In this ad for a new magazine, Adam, we see a series of photos, first of a man, then of a woman, each photo showing a slightly different facial expression corresponding to a (supposedly) different basic attitude. The captions under the pictures are, in succession, l'homme-vacances, -travail, -sport, -mode, -voitures, -maison, -coeur, -corps, -lettres, -photos, -pour, -contre; for the woman, the captions are the same except for the substitution of femme for homme. Despite the visual aids, the reader can only really be sure about the last two compounds, which, incidentally, have prepositions as their second members: l'homme qui est pour (or contre) qqch. The remainder might be paraphrased as the Subject + Direct Object type with deleted aimer, to like (e.g. l'homme qui aime les photos, les voitures, etc.), but we are not entirely sure (e.g. l'homme-coeur could signify l'homme qui a du coeur, the man who is brave). Then again, perhaps these compounds are meant to be facetious or purposely ambiguous. In any event, viewing the entire gamut of double-noun compounds in French, we can safely say that these particular examples are virtually doomed to neological status.

A prescriptive grammarian may wish to dismiss a good number of the examples that I quote simply as hasty journalese or as constructions that rely too heavily on the influence of other languages (e.g. auto assurance, car insurance, and maîtresse pièce, masterpiece, both of which have alternative forms fitting more closely into native French syntax: assurance-auto, and pièce maîtresse or chef d'oeuvre).

On both counts, the prescriptive grammarian would be correct to a cer-
tain degree. Furthermore, he can object, on purely stylistic grounds,
to any overindulgence in the use of these compounds within a relatively
short space; no one would write -- except facetiously -- the following
paragraph in which I have deliberately concentrated compounds ending in
-suicide (all of these, however, did originally appear in the text of
a multi-page article in Paris-Match):

> Les pilotes-suicide, appartenant à des escadrilles-suicide,
> ont enfin décidé de lancer leur opération-suicide en faisant
> des départs-suicide dans leurs avions-suicide qui contenaient
> déjà des charges-suicide. Cette mission-suicide une fois lan-
> cée, ils ont réussi de beaux vols-suicide qui se sont terminés,
> bien entendu, dans une série d'attaques-suicide.

And yet, despite the efforts of conservative purists like Etiemble,
a disturbingly large number of the types of compounds outlined in
this paper keep reappearing throughout all levels and varieties of
modern French, so that it would be folly not to admit that they have
become, for all intents and purposes, a permanent part of the language,
worthy of extensive treatment in contemporary grammars, whether peda-
gogical or purely descriptive.[22]

NOTES

[1] A shorter version of this article, containing a somewhat dif-
ferent analysis and considerably less supporting data, appeared in
the French Review, XLVI (1972), 67-73.

[2] M. Grevisse makes note of this (Le Bon Usage, 8e éd., 1964,
paragraph 141.1) but does not expand his discussion accordingly.

[3] A. Darmsteter, Traité de la formation des mots composés en
français (Paris, 1874). One might also consider as a "major revision"
Anna Granville Hatcher's article of some thirty years ago ("Le type
timbre-poste", Word 2:3 (1946), 216-28), although I would disagree
with this assessment. In a more contemporary vein, i.e. also inspired
by TG grammar, one should not fail to cite either C. Rohrer's treat-
ment -- albeit somewhat brief -- in his dissertation, Die Wortzusam-
mensetzung in Modernen Französisch (Tubingen, 1967), or P. Barbaud's
more extensive and highly interesting analysis in "L'Ambiguïté struc-
turale du composé binominal", Cahier de linguistique no. 1 (U. de Qué-
bec, 1971), 71-116.

[4] In an article of a few years back, "Composé nominal, locution
et syntagme libre" (La Linguistique 1969:2, 5-26), N.C.W. Spence
argues plausibly for the near-impossibility of distinguishing between
these three grammatical categories in contemporary French; in view of
this, I make no attempt to utilize such a distinction, and I describe
and classify all three types indiscriminately. In other words, it seems

virtually impossible to adhere strictly to the traditional definition
of 'nominal compound': a group of words of which the total meaning is
something more than just the sum of its separate parts, and which
demonstrates internal cohesion strong enough to prevent the natural
insertion of further modifiers and/or of 'grammatical words' (deter-
miners and prepositions); e.g. sage-femme, midwife, does not mean
'wise woman' nor is it expandable to *très sage-femme; yaourt nature,
plain yogurt, cannot be modified to *yaourt de la nature nor to
*yaourt comme la nature. We are undoubtedly dealing here with a con-
tinuum of examples, at one end of which we find concatenations as
rigid as sage-femme, and at the other, those whose total meaning is
virtually transparent and which easily permit insertions such as those
above, e.g. sandwich beurre, sandwich with butter, as a surface
variant of un sandwich au beurre (same meaning). It is interesting
to note that Spence, too, finds flaws in the presently available class-
ifications of double-noun compounds, particularly in K. Nyrop's three-
way division ("composés par apposition, par coördination, par subor-
dination").

[5]Called, respectively, appositional and prepositional in D.'s
account.

[6]One also finds the triple compound moissonneuse-batteuse-lieuse,
reaper-thresher-binder.

[7]Interestingly enough, Hatcher denies that this particular com-
pound would ever occur (op.cit. fn. 16); of course, she is referring
to the meaning 'light year' (année-lumière), certainly a more fre-
quently attested compound.

[8]This intuitive feeling is sometimes reinforced by morphological
indications in the form of gender (le danseur étoile, une femme auteur)
and sg./pl. contrast (les gants paille, ces disques-lotion). As is well
known, however, the -s of Noun B is often quite arbitrarily added or
left out, depending upon the whim of the author (des hommes-remparts
but des yaourts nature). Moreover, many of the examples quoted in this
paper are simply never used in the plural, due in part to their relative
infrequency.

[9]A. Eskénazi, "Quelques remarques sur le type ce fripon de valet
et sur certaines fonctions de la préposition de", Français moderne 35
(1967), 197.

[10]For a more subtle and far-reaching discussion of the relationships
obtaining between nouns and names, the reader should consult A. Hahn's
Naming-Constructions in Indo-European Languages (Am. Philological Assoc.
Monograph 27, 1969); cf. also L. Zgusta's review of same, Language 48
(1972), 695-702.

[11]One of the best general treatments of the noun and adjective in
French is to be found in C. Bally's Linguistique générale et linguistique
française, 3rd ed. (1950), paragraphs 147, 179-96, under the general

heading of "la transposition". For the purposes of this article, I treat noun-adjectives simply as nouns because I do not feel that recognizing two categories (noun, adjective) or three (noun, adjective, noun-adjective) basically affects the syntactic analysis suggested for double-noun compounds as a whole.

[12]Note the contrast with previously cited uses of _éclair_ where the term indicated rapidity.

[13]Hatcher suggests (op.cit., fn.16) the interpretation _b. qui sert de c._, quoting a secondary source: "Un b.-c. est un b. qui tient lieu de c.".

[14]Hatcher has already taken D. to task on this point, particularly with regard to the subtlety of semantic relationships demonstrated by the two most commonly occurring prepositions, _à_ and _de_. I maintain that it is even more useful to try to push the ellipsis back to full sentences, a procedure only hinted at in her semantic categories. Further, H.'s primary interest, as well as D.'s, is determining the historical origin of present-day compounds, as opposed to the way these might be spontaneously analyzed by contemporary, non-learnèd French speakers.

[15]An alternative analysis was previously suggested for Noun B: _avo-cat-conseil_ = _avocat qui conseille_, i.e. Subject + Verb.

[16]Note that the compound is not of the _A est B_, _B est A_ type, i.e. it does not indicate a double profession, 'mechanic-dentist'.

[17]Notice the contrast with the previously cited _poteau frontière_ (Subject + Direct Object: _ce p. marque la f._); while it would not be impossible to include this compound in the present group (_on trouve ce p. à la f._), it would be somewhat weird to try to put _province fron-tière_ in the previous group (_cette p. marque la f._), since only one border of the province would be fulfilling this function.

[18]Note the ambiguity of this formation, which has already been seen with the meaning of 'flowered rug', i.e. _le tapis a des fleurs_, Subject + Direct Object.

[19]Hatcher (fn. 16) opts for the first paraphrase ("aide à maçon") for historical reasons; see also her lengthy citation of the views of various grammarians on the problem of verb vs. noun (fn. 18). Arguing against my second analysis here is the view that, technically (and se-mantically?) speaking, _quelqu'un qui aide un maçon_ is not yet necessarily an _aide-maçon_ -- it could be an entirely fortuitous and short-term relationship.

[20]Actually, the former paraphrase is the more accurate, since the compound means 'papier mâché'.

[21] I am indebted to R.B. Lees for this humorous comparison.

[22] Spence agrees: "Quelle que soit la réaction des puristes, l'existence de ce genre de construction est un fait acquis qui doit entrer en ligne de compte...et qui met plus ou moins sur le même plan les 'constructions raccourcies' nom + nom et les 'composés' nom + nom dont le second élément est un complément de relation du premier..." (op.cit., 20). This predilection for the use of double-noun compounds goes far beyond a somewhat parallel one noted by Bally some thirty years ago; he claimed that prepositional phrases modifying headwords of nominal phrases were being gradually replaced by newly-formed adjectives, e.g. chaleur du soleil giving way to chaleur solaire, and chaleur des tropiques to chaleur tropique (op.cit., paragraphs 434, 592), i.e. another case of "transposition" (see fn. 11).

SOME RULES OF KORYAK PHONOLOGY

Michael Kenstowicz

Koryak and the closely related Chukchee form one branch of the Paleo-Siberian family of languages of northeastern Siberia. According to the 1959 census there are about 6,300 Koryak speakers living on the Kamchatka peninsula. Data for the analysis presented here have been extracted from Zhukova (1972) and Bogoras (1917, 1922). The following dictionaries were also consulted: Korsakov (1939), Moll (1960), and Zhukova (1967).

1. Koryak has the following phonetic inventory.

(1)

i		u	p	t	t'	c	k	q
e	ə	o	v	l	l'		γ	ɦ
	a		m	n	n'		ŋ	
			w		j			

The shwa assumes various phonetic qualities depending on consonantal environment, but is always distinguished from the other vowels by its inherent shortness. t', l', and n' are palatalized alveolars. The velar spirant γ, the velar nasal ŋ, the pharyngeal ɦ, and the shwa will be transcribed here as g, N, h, and E, respectively. The consonants have relatively free distributions except that in final position v turns to w and q deletes. In addition, all words transcribed as vowel initial begin with a glottal stop, a point I return to later. The language does not tolerate vowel sequences, which are eliminated by a truncation rule. Neither final clusters nor medial three-consonant clusters are permitted, and most initial clusters are prohibited as well. When such impermissible clusters arise in underlying forms, they are resolved by the insertion of shwa.

My primary concern will be with the major vocalic alternations that occur in inflection and derivation. There are a fair number of more or less automatic consonant assimilation rules which shall be touched on only as the need arises.

2. Both Koryak and Chukchee have a complex dominant-recessive vowel harmony system along the phonetic parameter high-low. Although not enough space is available for a detailed analysis, I shall present the basic facts, for the harmonic changes pervade all of the examples to be discussed later. I shall first sketch the situation in Chukchee, from which the Koryak system has evolved. Most descriptions of Chukchee treat the language as having six vowel phonemes: i, u, e, o, a, and shwa. i and u are recessive vowels while a and o are dominant. The high vowels are realized as e and o whenever they occur in a word containing a dominant vowel. The harmony works in both directions and can stretch over great distances. For example, the designative suffix -nu appears in its basic shape after stems containing recessive vowels, but as -no after stems containing dominant vowels:

milute-nu 'as a rabbit', tutlik-u 'as a snipe', orw-o 'as a sledge', jara-no 'as a skin tent', wopqa-no 'as a moose'.[1] The locative suffix -gjit meaning 'along, oriented with respect to' has a similar range of alternation: quli-gjit 'voice', milute-gjit 'rabbit', jara-gjet 'skin tent'. The comitative ge-... -ma shows the harmonic influence of a suffix on a stem: ga-tete-ma 'along with a 'needle' (titi-NE 'needle'), ga-melota-ma 'along with a rabbit'. As is evident from these examples e is also a recessive vowel that shifts to a when accompanied by a dominant vowel. A variant of the comitative construction illustrates this better: ge-kupre-te 'along with a net', ge-milgEr-e 'along with a gun', but ga-wopqa-ta 'along with a moose'. There are, however, a significant number of morphemes containing e which is a dominant vowel. As such, it suffers no change, but mutates recessive vowels: kerker 'woman's fur costume', nE-tur-qin 'new', but tor-kerker 'new woman's fur costume', a comitative construction in which the adjectival root has been incorporated into the noun; similarly, gil'gil' 'ice floe', nE-ɟet-Eqen 'old', but ɟet-Egel'gel' 'old ice floe', where ɟet- has changed the i 's of gil'gil' and the adjectival suffix -qin .

There is some question as to whether there is a phonetic difference between the dominant and recessive e. Bogoras transcibes them differently, but for morphophonemic, not phonetic, reasons. He states (1922:649) that 'in pronunciation [they] differ little'. According to Skorik (1961) recessive e, whether basic or derived from i, is similar to the vowel in Russian tseɟ' , which would make it a mid front close vowel [e] , while dominant e is similar to but lower than the vowel in Russian exo 'echo', which would make it at least as low as and probably lower than [ɛ] . Skorik also says that recessive o derived from u and dominant o differ in a similar fashion, the first being close and the second open. Although these phonetic differences in the mid vowels are not indicated in the Chukchee orthography (based on Russian), nor in linguistic descriptions (except for Bogoras, who, as noted above, transcribes them differently on morphophonemic grounds), it seems appropriate to raise the open-close distinction to the morphophonemic level in order to retain a purely phonological formulation of the harmony rule. Otherwise, the two different kinds of e would have to be distinguished lexically.

Such a lexical treatment will, however, be required for the many morphemes containing shwas, for they function both as dominant and recessive. Each type appears with about equal frequency, unlike dominant e, which is rather infrequent when compared to recessive e. For example, the morpheme meaning 'sleep' jElq- (cf. jElqjEl 'a sleep') is recessive in jElq-et-Ek, while NErqEl 'shame' is dominant, as in NErqEl-at-Ek 'to be ashamed'. Shirokov (1974) cites the following minimal pair: ge-nwE-lin 'he moved' vs. ga-nwE-len 'he scraped off'.

If the shwa is ignored, however, it is clearly possible to treat the Chukchee vowel harmony in phonetic terms as an assimilation of lowness in the environment of low vowels, as depicted in (2).

(2)

```
                              i              u
                              ↓              ↓
                              e              o
  recessive _____  E  - - - - - - - - - - - - - - -
                                            dominant
                              ε       a       ɔ
```

Disregarding the multiple-application properties of the rule, it can be formulated as follows. [2]

(3)

$$
\begin{bmatrix} +\text{syll} \\ +\text{long} \\ -\text{low} \\ <-\text{high}> \end{bmatrix} \rightarrow \begin{bmatrix} -\text{high} \\ <+\text{low}> \\ <+\text{back}> \end{bmatrix} \% \cdot \underline{\quad} (C_0 V)_0 C_0 \begin{bmatrix} +\text{syll} \\ +\text{low} \end{bmatrix}
$$

In Koryak the harmony system is not nearly as phonetically based as in Chukchee. In addition to having a dominant and recessive sawa (in approximately equal frequency), the phonetic difference between recessive e and dominant ε has been lost, according to Bogoras (1922:671), by a raising of ε to e. Thus, in Koryak there are harmonically different but phonetically identical e's which must be differentiated in some ad hoc lexical fashion. Compare ge-lle-lin 'he led him' vs. ga-penj-Elen 'he attacked him' (cf. Chukchee ga-pεnr-Enen). In addition, in most Koryak dialects e has become a in a large number of morphemes (under no apparent phonetic conditioning): compare Chukchee kejN-En 'bear', ekEk 'son', qeme-NE 'dish', and Koryak kajN-En, akEk, qama-Na. Although in some cases these a's function as dominant (e.g. qama-Na from /qama-Ne/), they are usually recessive (e.g. kajN-u 'as a bear').

3. I now trun to some of the rules involved in the inflection of nouns. Koryak has eleven case forms: absolute (subject of intransitive and object of transitive verb), ergative-instrumental -te, locative -k, dative -N, narrative-causative ('about, because of') -kjit, designative (with verbs of naming, becoming, being) -nu, various comitative forms ge-...-te, ge-...-me, ge-...-ma, and finally various locational-directional forms built on the dative: allative -et-N, ablative -N-ko, and orientive -ip-N. If the noun designates a distinct animate being, -ne is siffixed between the stem and inflectional ending. Number (singular, dual, and plural) is marked only in the absolute.

In inflection, most of the interesting phonology is associated with the absolute case forms. In the singular most derived and many nonderived nouns are marked by the ending -n. A few primary stems take -Ne (e.g.

titi-Nc 'needle', jaja-Na 'house'), a significant number are marked by $\emptyset$, a somewhat larger number by reduplication, and the rest by -n. For some nouns the latter two ways of indicating the absolute sg. are in free variation: wutqEwut, wutq-En 'darkness'; milgEmil, milg-En 'fire'; tan'NEtan', tan'N-En 'enemy'.

In (4) I give a sample of consonant-final stems taking $\emptyset$ in the absolute sg.

(4)	sing.	dual	plural	
	cawat	cawat-te	cawat-o	'lasso'
	ilij	ilij-ti	ilij-u	'island'
	mEjen	mEjen-ti	mEjen-u	'mosquito'
	milgEthul	milgEthul-ti	milgEthul-u	'spark'
	wejem	wejem-Et	wejem-u	'river'
	qaNjaw	qaNjaw-Et	qaNjaw-o	'collapse'
	qEtep	qEtep-Et	qEtep-u	'bolt'
	qElik	qElik-Et	qElik-u	'male'

The vowel of the dual suffix -ti is deleted when the preceding stem ends in a noncoronal consonant. This behavior is restricted to just the dual suffix. Other inflectional suffixes do not lose their final vowel in such an environment. Subsequent to the loss of the vowel in the dual, the resultant consonant cluster is broken by a general rule of final epenthesis.

(5) $\emptyset \rightarrow E / C\_C\#$

(6) presents a sample of vowel-final stems.

titi-Ne	titi-t	titi-w	'needle'
jaja-Na	jaja-t	jaja-w	'house'
aNqa	aNqa-t	aNqa-w	'sea'
pENlo-n	pENlo-t	pENlo-w	'question'

They also trigger the deletion of the vowel in the dual suffix. Since all other endings of the shape -CV retain their final vowel, but truncate the consonant after a consonant, the dual suffix exhibits an alternation pattern of its own, which may be covered by the rule in (7).

(7)
$$\begin{matrix} & & V & \\ V & \rightarrow \emptyset / & C & -t\_\_\_ \# \\ [\text{dual}] & & [-\text{cor}] & \end{matrix}$$

The plural suffix shows an alternation between w and u, which appears as o by harmony. One fairly weak reason for setting up -w as the underlying form is that there are a few stems which evidence a rule vocalizing the glides in the context C_#. For example, 'brain' is awi, awja-t, awja-w from /awja/. A rule of apocope to be discussed momentarily shortens the

stem to awj in the singular which then vocalizes to awi. One cannot set up /awia/ as the underlying form since vowel sequences do not otherwise occur within a single morpheme and there is a general rule of truncation in the language (see below). I have been unable to find any stems with w vocalized in Koryak. Chuchee has a few (e. g. maco, macwe-t 'breast'), but in Koryak these stems take a derivational suffix (macwe-lN-En). Thus, although the evidence is slim, I treat the plural as basic -w. It shows this shape after a vowel-final stem, but is vocalized aftrer a consonant by the following rule, which must be ordered before epenthesis and vowel harmony.

(8) [j, w] → [i, u] / C __ #

The nouns in (9) appear as consonant-final in the singular, but show an unpredictable stem-final vowel before the plural and dual suffixes.

(9)

milut	milute-t	milute-w	'rabbit'
ajkol	ajkola-t	ajkola-w	'bed'
kakac	kakace-t	kakaco-w	'bird sp.'
kEcwEj	kEcwEju-t	kEcwEju-w	'hair'
hujetik	hujetiki-t	hujetiki-w	'sleigh'

This vowel appears whenever the stem is followed by a consonant-initial suffix: milute-te erg., milute-k loc., melota-N dat., melota-N-ko all., milute-nu desig., etc. We thus require a rule of apocope. Since inflectional endings, aside from the dual, do not lose thier final vowel, and since it is only in the absolute sg. of nouns that an inflected stem will appear word-final (all other forms being followed by an ending), apocope affects only stem vowels. The rule may thus be stated as follows.

(10) $\underset{[+stem]}{V}$ → Ø / __ #

There are about twenty disyllabic stems, all ending in a, which do not lose their final vowel. Some of these are listed in (11).

(11)

an'a	an'a-t	an'a-w	'grandmother'
appa	appa-t	appa-w	'papa'
hol'a	hol'a-t	hol'a-w	'man'
wala	wala-t	wala-w	'knife'
ponta	ponta-t	ponta-w	'liver'
wopqa	wopqa-t	wopqa-w	'moose'
umqa	umqa-t	umqa-w	'polar bear'
cEmNa	cEmNa-t	cEmNa-w	'reindeer bull'

The failure of apocope to apply to at least some of the stems can be viewed as motivated, because there are no phonetic monosyllabic nouns in Koryak. All underlying monosyllabic nouns are either reduplicated or provided with

-n in the absolute singular. If apocope were to apply to a form like an'a
to give an', this generalization would be violated.

In view of the fact that all examples of apocope in (9) above involve stems
that are trisyllabic or longer, one might propose to formulate the rule as (12).

(12) $\begin{array}{c} V \\ \text{[+stem]} \end{array} \rightarrow \emptyset \: / \: VC_oVC_o \: \underline{\hspace{1cm}} \: \#$

There are at least two pieces of evidence that appear to support this formulation
of the rule. First, borrowings from Russian ending in a vowel lose that
vowel when trisyllabic, but retain it is they are disyllabic.

(13)   korow   korowa-t   korowa-w   'cow' (R. korovạ)
         urwaq   urwaqa-t   urwaqa-w   'shirt' (R. rubaska)
         cena   cena-t   cena-w   'hay' (R. seno)
         cetla   cetla-t   cetla-w   'saddle' (R. sedlo)

Secondly, there are examples in which stems from (11) appear as the final
member of a compound. In such cases their final vowel is lost, presumably
because the stem is now at least three syllables long: cf. wala 'knife', but
cEmkat-wal 'pen knife' (cEmkat-Ek 'to fold').

Nevertheless, there are a sufficient number of disyllabic stems that do
lose their final vowel, making the formulation in (12) incorrect. First,
there are stems like awi, awja-t, awja-w 'brain' from awja- which lose the
final vowel but subsequently vocalize the glide. Second, there are stems
that have a shwa inserted into the final cluster after the loss of the final
vowel.

(14)   maqEm   maqmi-t   maqmi-w   'bullet'
         juNEj   juNju-t   juNju-w   'whale'
         tEqEl   tEqle-t   tEqle-w   'poplar tree'
         awEt   awta-t   awta-w   'flint'
         akEk   akka-t   akka-w   'son'

The correct formulation of apocope thus appears to be that a word-final
stem vowel is dropped so long as the resultant stem contains at least two
vowels phonetically, either because these two vowels appear in the under-
lying form, as in milut from /milute-/, or as the result of a subsequent
rule (vocalization in the case of awi, or epenthesis in the case of maqEm).
The relatively few forms like ponta, wopqa, etc. will simply have to be
marked as exceptions to apocope in the lexicon.

There is just one more class of stems to be discussed--those ending
in an underlying consonant cluster. Most of these take -n in the absolute
sg. A sample is presented in (15).

(15)	mimEl	miml-Et	miml-u	'water'
	nEkEl	nEkl-Et	nEkl-o	'nut'
	kajN-En	kajN-Et	kajN-u	'bear'
	pojg-En	pojg-Et	pojg-o	'spear'
	NilN-En	NilN-Et	NilN-u	'strap'

The singular forms arise from an application of final epenthesis, while the plurals undergo vocalization of the -w and subsequent vowel harmony. The interesting forms are the duals, where we find that in words such as miml-Et the underlying vowel of -ti has been dropped even though the stem ends in a coronal consonant (cf. milgEthul-ti discussed earlier). These forms can be explained by ordering dual drop after the rule of internal epenthesis, a general rule of Koryak which ensures that no medial three-consonant clusters can arise phonetically. We will return to this rule in more detail later but state it here as (16).

(16) $\emptyset \rightarrow E$ /CC___C

The derivations of the various forms of 'water' appear in (17) below.[3]

(17)	#miml#	#miml-ti#	#miml-w#	
	------	--------	miml-u	vocalization
	------	miml-Eti	------	internal epenthesis
	------	miml-Et	------	dual drop
	-mimEl	--------	-------	final epenthesis

    4. I now turn to a discussion of reduplication, which occurs in two basic types in Koryak. First, there are stems that are reduplicated in all forms of the noun inflection; the nonreduplicated stem shape appears in the majority of nonprimary forms in which a derivational affix has been added to the underlying stem. There are a very few roots of the shape CV-, all of which fall into this reduplication class: titi-Ne, titi-t, titi-w 'needle', (cf. te-jolg-En 'needle case', titi-nequ 'big needle'); jaja-Na, jaja-t, jaja-w 'house' (cf. ta-ja-N-kE 'to build a house', ta-qleva-N-ja-n 'bakery', cf. qleva-n 'bread', ta-qleva-N-kE 'to bake bread'), jaja-pel 'house, dimin.'
    Aside from the relatively small number of roots of the shape CV-, the rest of the first class of reduplicated stems is composed of stems with the underlying shape (C)VC-.

(18)	tiltil	tiltil-ti	tiltil-u	'wing'
	cotcot	cotcot-te	cotcot-o	'pillow'
	kejkej	kej-ej-te	kejkej-o	'costume'
	aNaN	aNaN-Et	aNaN-u	'edible plant'
	weqweq	weqweq-Et	weqweq-u	'a step' (cf. weq-Etku-k 'to step')

Turning now to the second type of reduplication, it occurs only in the absolute sg. All stems in this group have the basic shapes (C)VCV-, corresponding to (6), (C)VCCV-, corresponding to (14), and (C)VCC-, corresponding to (15).

(19)

wunewun	wune-t	wune-w	'cedar cone'
nituhit	hitu-t	nitu-w	'goose'
kalikal	kali-t	kali-w	'book, letter'
megomeg	mego-t	mego-w	'moss'
[?]ala[?]al	[?]ala-t	[?]ala-w	'summer'
gitgigit	gitgi-t	gitgi-w	'fish sp.'
kinmakin	kinma-t	kinma-w	'tree root'
kulhukul	kulhu-t	kulhu-w	'tree knot'
melpomel	melpo-t	melpo-w	'beetle sp.'
[?]alpe[?]al	[?]alpe-t	[?]alpe-w	'fish sp.'
jilpEjil	jilp-Et	jilɔ-u	'target'
kumNEkum	kumN-Et	kumN-u	'voice'
tilmEtil	tilm-Et	tilm-u	'eagle'
tumgEtum	tumg-Et	tumg-u	'comrade'
[?]uttT[?]ut	[?]utt-Ft	[?]utt-u	'tree'

The reduplication rule may be formulated as follows:

(20)   # (C) V (C)
        1   2 3 4   → 1 2 3 + 2 3 4

A possible alternative analysis has probably occurred to the reader--namely to have complete reduplication followed by a rule reducing the final portion of the copied material. Under this approach a form like wunewun would come from /wunewune/ by apocope. But there is no independently motivated rule that would simplify the final clusters that would result from the complete reduplication of stems like gitgi- and jilɔ- . Given the rules already present in the grammar, the following derivations should occur.

(21)

#gitg#	#jilp#	
gitgigitgi	jilpjilp	complete reduplication
gitgigitg	------	apocope
-------	jilpEjilp	internal epenthesis
*gitgigitEg	*jilpEjilEp	final epenthesis

In order for the complete reduplication analysis to work, a special cluster simplification rule for just reduplicated forms would have to be invoked. But this suggests that, in fact, these forms are not fully reduplicated and

that the reduplication rule is restricted to copy the initial (C)V(C) of the stem, as given in the formulation of (20). This formulation is motivated by the existence of i) the constraint that there are no final consonant clusters pho- netically, and ii) by the presence of a rule apocopating vowels in the absolute sg. Thus, the reduplication rule is doing some of the work of final epenthesis. and apocope. But this division of labor has been reported for other languages (e. g. Kisseberth 1969).

Reduplicated roots ending in a consonant cluster such as tumgEtum merit special comment here. I have assumed that they are derived as follows.

(22)   #tumg#
         tumgtum   reduplication
         tumgEtum   internal epenthesis

A piece of evidence showing that the shwa is inserted in this derivation rather than being part of the underlying representation comes from the allomorphy of the ergative suffix -te. Like all other inflectional suffixes (except the dual -ti) of the shape -C̄V̄, it loses its initial consonant after a stem ending in a consonant.

(23)   vowel-final   abs. sg.   erg.
         stems   wala   wala-ta   'knife'
                            titi-Ne   titi-te   'needle'
                            muqemuq   muqe-te   'rain'
                            ujetik   ujetiki-te   'sleigh'

         consonant-final   wejem   wejem-e   'river'
         stems   cawat   cawat-a   'lasso'
                            jewjew   jewjew-e   'bird sp. '
                            kajN-En   kajN-a   'bear'

If the shwa E̱ in a form such as tumgEtum were not epenthetic but instead part of the underlying form, one would expect the ergative suffix to retain its final consonant in a underlying form like /tumgE-te/. There would be no reason to drop the shwa, as it would give rise to a three-consonant cluster. But the correct ergative form is tumg-e. It can be derived straight- forwardly if it is assumed that the underlying form of the stem is tumg-, i. e. that it ends in a consonant.

Finally, forms like alaal 'summer' [ʔalaʔal] show that reduplication must be applied after the rule of prothesis that inserts a glottal stop at the beginning of a word that would otherwise begin with a vowel. Note that in uttEut [ʔuttEʔut] 'tree' the copied ʔ occasions the rule of internal epenthesis. The reason for treating the glottal stop as prothetic is simply that it does not appear when the stem is not word initial. Thus, compare 'firewood' with t-utt-ENkE 'to store up firewood', which derives from

/te-utt-N-k/. If the glottal stop were an organic part of the root, one would expect the addition of te- to have no effect on the glottal stop and the form *te-ʔutt-ENkE to emerge. Instead, the underlying vowel cluster of /te-utt-N-k/ is resolved by a truncation rule. Since the word-initial glottal stop also does not appear when a consonant-initial prefix is added (e. g.[ʔ]ajat-Ek 'to fall', mal-ajat-Ek 'to collapse'), its appearance can be entirely predicted by the prothesis rule.

5. As mentioned earlier, Koryak does not permit vowel sequences phonetically. When a vowel sequence arises through the juxtaposition of morphemes in underlying forms, the sequence is resolved in the following manner. If the first vowel is round, the second deletes. If the first vowel is not round, then it deletes. Although due to the vowel harmony rule it is impossible to find unambiguous cases of all possible vowel sequences, the following is a representative sample.

(24) adverbial e-
    nE-tgEl-qin 'hot', e-tgEl-ke 'hotly'
    n-om-qen 'warm', om-ka (/e-om-ke/) 'warmly'   ∉+o
    n-icc-Eqin 'heavy', icc-Eke (/e-icc-Eke/) 'heavily'   ∉+i

  denominal -in
    uttEut 'tree', utt-in 'wooden'
    jajol 'fox', jajol-en (< /jajola-in/) 'foxy', cf. jajola-t dual ∌+i
    kEmlikEm 'cotton', kEml-in (< /kEmli-in/) 'cotton'   i̵±i̵
    colkocol 'silk', colko-n (< /colko-in/) 'silken'   o+i̵

  denominal -et
    weqweq 'a step', weq-et-Ek 'to step'
    ewji-k 'to eat', ewj-et-Ek (< /ewji-et-k/) 'to feed'   i̵+e
    ajkol 'bed', ajkol-at-Ek (< /ajkola-et-k/) 'to make a bed'   ∌+e
        (cf. ajkola-t dual)
    inuin 'foodstuffs', inu-t-Ek (< /inu-et-k/) 'to stock up'   u+∉

  denominal -u
    nEkEl 'nut', nEkl-u-k 'to eat nuts'
    jajol-o-k 'fox', jajol-o-k (< /jajola-u-k/) 'to bag a fox'   ∌+u
    ElweEl 'wild reindeer', Elw-u-k (< /Elwe-u-k/) 'to bag a   ∉+u
        wild reindeer'

6. As observed earlier, Koryak does not toletrate a sequence of three medial consonants phonetically. If such a cluster arises through the concatenation of morphemes in underlying representation, a shwa E is inserted to break up the cluster. When one morpheme ends in a cluster and the following morpheme begins with a single consonant, the shwa is placed between the final two consonants of the three-consonant cluster. In addition

to the many examples cited earlier that are occasioned by the addition of the dual suffix -ti to a stem ending in a cluster, a couple of more will be cited here. The adjectival suffix -kine, which apocopates its final vowel, will invoke internal epenthesis: anoan 'spring', ano-ken 'spring, adj. '; wejem 'river', wejem-kin 'river, adj'; but umk-En 'forest', umk-Ekin 'forest, adj.'[4] Another example is provided by the suffix -jun, used to denote the beginning of weather phenomena: muqemuq 'rain', muqe-jun-Ek 'to begin to rain'; lEqleN 'winter', lEqlen-jun-Ek[5] 'winter sets in'; but wutqEwut 'darkness', wutq-Ejun-Ek 'darkness begins', from /wutq-jun-k/.

But when the suffix begins with a consonant cluster, the shwa is inserted between the first two members of the CCC sequence. The verbalizing and inchoative suffixes -tku and -tvi illustrate this aspect of internal epenthesis.

(25)

wala	'knife'	wala-tko-k	''to plane'
cawat	'lasso'	cawat-Etku-k	'to lasso'
vilvil	'price'	vil-Etku-k	'to trade'
jajaj	'tambourine'	jajaj-Etko-k	'to beat a tamb. '
nE-ketgu-qin	'strong'	ketgu-tvi-k	'become strong'
nE-mit-qin	'smart'	mit-Etvi-k	'become smart'
wutqEwut	'dark'	wutq-Etvi-k	'get dark'

Thus, given a string of three successive consonants containing a morpheme boundary, internal epenthesis will insert a shwa at the seam between the morphemes rather than within a morpheme. Final epenthesis, on the other hand, will of course enter the morpheme. Compare in this regard the interesting set of words mimEl 'water', but miml-Ekin 'water, adj' from the root /miml-/. Incidentally, this example provides a reason for considering the shwa of mimEl to be epenthetic rather than part of the underlying form. If the basic shape were /mimEl/, one would have expected the adjectival form to be mimEl-kin and not miml-Ekin. Another difference between the two epenthesis processes is that final, epenthesis will not break up a velar nasal N plus k cluster, instead placing the shwa at the end of the word. But internal epenthesis will enter this cluster when required. Examples are provided by the locative and infinitive suffixes -k.

(26)

jaja-Na	'house'	jaja-k	'in the house'
wejem	'river'	wejem-Ek	'in the river'
ilgElq-En	'plain'	ilgElq-Ek	'on the plain'
lEqleN	'winter'	lEqleN-kE	'in winter'
uttEut	'tree'	utt-EgiN-kE	'under the tree'
kajN-En	'bear'	kajN-Ek	'at the bear'
omakatgEjN-En	'meeting'	omakatgEjN-Ek	'at the meeting'

jaja-Na	'house'	ta-ja-N-kE	'to build a house'
NEto-k	'to go'	ja-Nto-N-kE	'to try to go'
vetat-Ek	'to work'	ja-vetan'-N-Ek	'to try to work'[6]

These suffixes show the shape -k after a vowel and -Ek after all consonants except -N. After the velar nasal the suffix is -kE if a vowel precedes the N, but -Ek if a consonant precedes. This allomorphy can be accounted for if it is assumed that final epenthesis is not permitted to break up a N̲k̲ cluster, but that internal epenthesis may. An example such as ja-vetan'-N-Ek also shows that internal epenthesis must be ordered before final epenthesis in order to bleed application of the latter rule. If final epenthesis is applied first the wrong output is obtained, as (27) shows.

(27)

#ja-vetat-N-k#		#ja-vetat-N-k#	
ja-vetat-N-Ek	internal ep.	ja-vetat-N-kE	final ep.
-------------	final ep.	ja-vetat-NE-kE	internal ep.
ja-vetan'-N-Ek	other rules	*ja-vetan'-NE-kE	other rules

Note that in the above derivation there is a string of three successive consonants with morpheme boundaries between each consonant, i.e. C-C-C. In such cases internal epenthesis regularly places the shwa between the second and third consonant, rather than between the first and second. Another example of this phenomenon occurs in the verb inflection. An intransitive verb is composed of a stem to which prefixes and suffixes marking person and number are affixed. In the present tense the stem is composed of the present sign ku-, the root, and the nonpast suffix -N. In the second person, the singular is unmarked, the nonsingular morpheme is -tEk, and the plural is marked by the intercalation of -la between the root and the nonpast suffix. Thus, the root lqut- 'stand' exhibits the following partial paradigm in the present tense.

(28)

	2 sg.	ku-lqut-EN
	2 dual	ku-lqun'-NE-tEk
	2 plural	ko-lqol-la-N-tEk[7]

Note that in /ku-lqut-N-tEk/, which underlies the 2 dual form, there is the string C-C-C. Once again the shwa is placed between the final two members of of the cluster. This can be described by the following ordering of the two subrules of internal epenthesis.

(29)

$$\emptyset \rightarrow \text{ə} \ / \ \begin{array}{l} C \ C + \underline{} \ C \\ C + \underline{} \ C \ C \end{array}$$

I now turn to the subtle matter of shwa-zero alternations in initial position. In general, initial consonant clusters are prohibited in Koryak. In some cases this is accomplished by the simplification of the cluster (cf. qut-Ek 'to stand', but ku-lqut-EN 'you sg. stand' from lqut-). Usually, however, initial clusters are broken up by the insertion of shwa. For example, the adjectival prefix n- displays the same kind of behavior as the absolute sg. suffix -n. It is added directly to vowel-initial roots, but is separated from consonant initial ones by shwa.

(30)   enanm-at-Ek   'to kill'   n-enanm-Eqen   'deadly'
        ujicv-et-Ek   'to play'   n-ujicv-Eqin   'playful'
        qejalg-En   'frost'   nE-qejalg-Eqen 'frosty'
        muqemuq   'rain'   nE-muqe-qin   'rainy'

We thus require a rule of initial epenthesis.

(31) $\emptyset - E / \# C \underline{\quad} C$

Things become more complex when shwa-zero alternations in roots are considered. I begin with roots showing the following alternating shapes: CECV(C)- and CCV(C)-, which will be referred to as vocalized and zero roots, respectively. A brief sample is given below.

(32)   pEkav-Ek   'not able to' nE-pkaw-qen   'helpless'
        jEvat-Ek   'to fold'   nE-nvat-qen   'folding'
        kEteg   'wind'   nE-kteg-qen   'windy'

There are two plausible analyses for this alternation. First, the zero allomorph can be viewed as the underlying form and the vocalized shape as arising from initial epenthesis. On this analysis 'wind' would be basic /kteg-/. Alternatively, the underlying form might be taken to be /kEteg-/. In this case a rule of syncope would be required to derive the zero allomorph. The rule would have to take the form of (33).

(33) $E - \emptyset / VC \underline{\quad} CV$

To help decide between these two alternatives, let us examine the shape of the root in all possible phonological contexts. First, when preceded by a vowel the roots display the zero allomorph: e.g. wEje-Nto-k 'to exhale', composed of wEjiwEj 'breath' and NEto-k 'to go out'. Under the insertion analysis 'go out' is basic /Nto-/. The zero shape appears after the vowel-final morpheme wEji- and the vocalized shape appears initially in NEto-k, via epenthesis. On the other hand, if the root is basic /NEto-/, addition of wEji- places the shwa of /NEto-/ in the context for syncope, which would apply to give wEji-Nto-k. Similar alternative analyses are possible for a form such as lEla-mla-k 'to wink' (cf. lEla-t 'eyes', mEle-k 'to break').

Second, consider what happens when one of these stems is preceded by a morpheme ending in a cluster: e.g. mollENto-k 'to bleed' is composed of the roots in mullEmul 'blood' and NEto-k 'to go out'. If the underlying form is Nto-, the only rule to apply when this root is added to mull- is internal epenthesis. Under the syncope analysis, the underlying form NEto- is added to mull- to create an internal three-consonant cluster /mull-NEto-k/. Internal epenthesis applies to give /mullENEto-k/; /Neto-/ now simplifies to Nto- by syncope.

But now consider the behavior of these roots when preceded by a single consonant. kElavEpkej-Ek 'to come running' is composed of the roots that appear in kElav-Ek 'to run' and pEkij-Ek 'to arrive'. If the roots are underlying /klav-/ and /pkij-/, the primary infinitives kElav-Ek and pEkij-Ek are derived by initial (and final) epenthesis, while the compound is derived as follows.

(34)   #klav-pkej-k#
        klavEpkej-k   internal epenthesis
        kElavEpkej-Ek initial and final epenthesis

On the other hand, the syncope analysis has trouble with this form. If the underlying forms are /kElav-/ and /pEkej-/, there is no independently motivated rule that will syncopate the shwa of /pEkej-/ in the underlying form /kElav-pEkij-k/, since doing so would give rise to a three-consonant cluster. A few other forms illustrating this point are listed below. They involve the intensifier prefix mal- and the diminutive qaj-.

(35)   tEgajtat-Ek   'to jump'   malE-tgajtat-Ek   'to jump up'
        tEgipew-Ek   'to guard'   malE-tgepaw-Ek   'to guard well'
        ajat-Ek   'to fall'   mal-ajat-Ek   'to collapse'
        wejem   'river'   qaj-wajam   'small river'
        kEmiN-En   'child'   qajE-kmiN-En   'small child'
        tEhEl-lEh-En   'sick'   qajE-thEl-Ek   'to be a little sick'

Finally, consider forms like mimlENta-k 'to fetch water', which is composed of the roots appearing in mimEl 'water' and NEta-k 'to go'. Recall that earlier I argued that mimEl comes from underlying /miml-/ on the basis of a form like mimlE-kin 'water, adj'. If the underlying form were /mimEl-kin/, why should the shwa of the root drop when doing so would give rise to a three-consonant cluster? Under the syncope analysis the underlying form for mimlENta-k would be /miml-NEta-k/ (or /mimEl-NEta-k/). In either case special ad hoc rules would have to be invoked to delete the shwa of the form, giving rise to four successive consonants, (or to delete both shwas in the latter). But if the shwaless alternants of these roots are the underlying forms, then /miml-Nta-k/ is converted directly to mimlENta-k by internal epenthesis.

We are thus driven to the conclusion that CCV(C) is the underlying form
of roots showing the alternating shapes CCV(C)- and CECV(C)-. Roots
alternating between the shapes CEC- and CC- also appear to have the zero
allomorph as basic, since they exhibit a similar patterning. For instance,
the root meaning 'drink' appears vocalized in the infinitive ɔEl-Ek, but in
the zero alternant when preceded by a morpheme ending in an underlying
consonant or vowel: compare taNEpl-Ek 'to drink up' from /taN-pl-k/ via
internal epenthesis and final epenthesis, and the root in tEm-Ek 'to kill'
in the form ga-nm-Elena-w 'he killed them' from /ge-tm-line-w/. There
are quite a large numbernof such roots, many of which, like tm- 'kill',
trigger vowel harmony. For example, kt- 'strong' appears in the zero
form in the adjective nE-kt-Eqen 'strong' from /n-ket-qin/ via initial and
internal epenthesis, but in the vocalized form when initial in a compound
such as kEt-hajNa-k 'to scream' (cf. hejNe-k 'to call'). Although there
may be some misgivings about setting up vowelless roots which have to
trigger vowel harmony, recall that lexical marking would be needed anyway
since some morphemes whose only vowel is shwa are dominant and some
are recessive. Also, there are morphemes which rather clearly contain
no underlying vowel, yet nevertheless are dominant. The dative suffix
-N is a case in point: aNqa-n 'sea', aNqa-N; wejem 'river', wajam-EN;
milg-En 'fire', melg-EN; milut 'rabbit', melota-N (cf. loc. milute-k);
en'pic 'father', an'pece-na-N (cf. loc. en'pici-ne-k). Thus, the dominant
nature of kt- 'strong' and tm- 'kill' with respect to harmony should be no
real hinderance to treating the vowelless alternant as underlying.

There is one large class of morphemes, however, that can be shown
to contain an underlying shwa. These are roots of the shape CECC-.
They never lose the shwa--presumably because to do so would give rise
to a three-consonant cluster. Thus, the root jElq- 'sleep' retains this
shape whether followed by a vowel, as in jElq-et-Ek 'to sleep', or by a
consonant, as in jElqEjEl 'a sleep' from /jElq-jEl/. Similarly, the roots
hEtv- 'boat' (hEtvEhEt) and kElt- 'tie' (kElt-Ek) are unaltered when followed
by a consonant cluster; a shwa is merely inserted at the morpheme boundary:
hElv-E-lhet-Ek 'to go by boat', kElt-E-tva-k 'to untie'. Also, roots of the
shape CECC- are impervious to what precedes. For instance, jEch- 'pour'
(jEch-et-Ek 'to pour') remains unchanged when preceded by a consonant, as
in taN-jEch-at-Ek 'to pour full'; compare the behavior of the root pl- 'drink'
discussed earlier: pEl-Ek 'to drink', but taNEpl-Ek 'to drink up'. Also
compare jEjka 'walrus', qaj-jEjka 'dimin.' vs. kEtap (cf. kEtapa-t,
kEtapa-w) 'mountain sheep', qajEktep 'lamb'. The shwa in CECC also
remains when a vowel precedes, as is shown by nEth-En 'dog', but
java-nEth-En 'dog used for transport'.

Footnotes

1. Inflectional suffixes of the shape CV drop their consonant after a consonant.
2. The % stands for a mirror image rule, as in Anderson (1974).
3. The placement of the inserted shwa relative to the morpheme boundary is indeterminable.
4. Once again I have arbitrarily placed the shwa after the morpheme boundary.
5. The velar nasal N̲ assimilates to n̲ before j̲.
6. t̲ assimilates to n̲' before the velar nasal N̲ in Koryak.
7. t̲ completely assimilates to a following l̲ in Koryak.
8. t̲ becomes n̲ before anterior nasals in Koryak.

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A COMPARATIVE STUDY OF DIALECT
VARIATIONS IN IRAN

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0. INTRODUCTION: The purpose of this paper is to compare the enclitic system
of two separate groups of dialects in Iran, namely, Meimeči and Jowshaqani,
belonging to the central groups of dialects, and the southern Tatī dialects,
belonging to the western group with the enclitics used in modern spoken Persian.
This comparison will be done in terms of the linguistic distribution of the
enclitics and their structural and semantic constraints.

1.0. CLASSIFICATION OF IRANIAN DIALECTS: According to Bailey (1963:1055), the
larger divisions among the new Iranian dialects are the result of old differences,
originating in the earliest period. Two large groups have been distinguished
by phonology, morphology and vocabulary. The Eastern group which is represented
by Ossetic, Yaghnabī, Pashto, etc., and the western group which includes Baluchī,
Kurdī, etc. In addition, in the central district of Iran, lying between Tehran
and Isfahan, Hamadan and Yazd, there are other dialects such as Natanzī, Meimeči,
etc., which share a common vocabulary.

2.0 DIALECTS SELECTED FOR COMPARISON: The dialects we have selected for com-
parison are Jowshaqanī and Meimeči investigated by Lambton (1938) and the
Southern Tatī dialects studied by Yar-Shater (1969). The information concerning
the geographical distribution of the dialects, methodological orientation, etc.,
as explained by the authors themselves, may be summarized as follows:

2.1 Jowshaqanī and Meime I

Jowshaqanī is the name given to the district bounded on the north by
Kashan, on the east by Natanz, on the west by Golpayegan, and on the north
by Murchekhort.

There are many villages and hamlets in this district, the most important
of which is Meime, on the Isfahan-Tehran road. There is also another village
named Jowshaqān after the district in which it is located. The population of
Meime is about two thousand and of the village Jowshaqān some thirteen hundred.

Lambton has attempted to describe these dialects briefly during her stay
in Isfahan in 1936. She has recorded a number of texts, employing the IPA
broad system of transcription. These recordings have been supplemented by more
information on two more occasions in the summer of 1937.

2.2. Southern Tatī Dialects

The term 'Tati Dialects' refers to the Iranian dialects spoken in North-
western Iran. These dialects constitute one of the most important branches of
North-western Iranian and are as follows: Chali, Takestani, Eshtehardi, Xiaraji,
Ebrahim-abadi, Sagz-abadi, Danesfani, Esfarvarini and Xoznini.

The study of these dialects is based on the corpus collected by Yar-shater in the course of four intermittent trips to the villages during the summer of 1955 - 1963, by direct notation or by subsequent transcription of recorded materials. The texts include tales, stories, poems, descriptive pieces, and other linguistic notes. About thirty informants have been used.

3.0. LINGUISTIC DISTRIBUTION OF ENCLITICS IN PERSIAN. The enclitics used in modern Persian may be categorized into subjective, objective and genitive. We will present these enclitics as they are used in the standard written language, but they are subject to certain phonological changes in the spoken language which we will not discuss here.[2]

Subjective		Objective		Genitive	
- am	'I'	- am	'me'	- am	'my'
- i	'you'	- at	'you'	- at	'your'
- ad	'he - she - it'	- aš	'him - her - it'	- aš	'his - her - its'
- im	'we'	- man	'us'	- man	'our'
- id	'you'	- tan	'you'	- tan	'your'
- and	'they'	- šan	'them'	- šan	'their'

According to the enclitic placement rule in Persian, the subjective enclitics appear after the verbal stem. Consider the following examples:

1. goft - am
    said + I
    'I said.'

2. mixam   ber-am
    want + I go + I
    'I want to go.'

3. Koja · raft-i
    where went + you
    'where did you go?'

The objective enclitics appear after the subjective enclitics as illustrated by the following examples:

4. did - am - eš
    saw + I + him
    'I saw him.'

5. zad _ am - eš
    hit + I + him
    'I hit him.'

6. Koja   did-i   _   sun
    where   saw + you + them
    'where did you see them?'

The genitive enclitics are suffixed to nouns.[3] Consider the following examples:

7. pedær – am ræft
   father + my went + ∅
   'my father left.'

8. Ketab – es̆ gom s̆od
   book + his lost became + ∅
   'His book was lost.'

9. Ketab-et   injā̄ – s(†)
   book + your here + is
   'Your book is here.'

4.0. LINGUISTIC DISTRIBUTION OF ENCLITICS IN MEIME I AND JOWSHAGHANI: The enclitics used in these two dialects are as follows:[4]

Subjective		Objective		Genitive	
Meim	Jowsh	Meim	Jowsh	Meim	Jowsh
–ɔn (un)	–am	–em	–am	–em	–am
–i	–i	–et	–at	–et	–at
–e	–e(Fem:–ea)	–es̆	–as̆	–es̆	–as̆
–īma(ima,–ma)	–	–emun	–amun	–emun	–amun
–īda	–	–edun	–adun	–edun	–adun
–īnda(enda)	–	–es̆un	–as̆un	–es̆un	–as̆un

In both Meimei and Jowshaqanī, the subjective enclitics appear after the verbal stem in the present tense and the preterit of intransive verbs. Consider the following examples

10. Meim.   aker – ɔn
             do + I
             'I do.'
    Jowsh: aker – am
             do + I
             'I do.'

11. Meim·   bemeij – ɔn
             came + I
             'I came.'
    Jowsh: bame – am
             came + I
             'I came.'

In comparison with the spoken Persian, the first striking feature of these dialects is that the objective enclitics occur before the verbal stem

12. Meim: as̆ – kos̆ – e
             him + kill + he
             'He kills him.'
    Jowsh   bem – axus –   inda
             pref+me+strike + they
             'They strike me.'

As the second striking feature of these dialects, we should mention the formation of past transitive and present perfect according to which the objective enclitics function as subjects and occur before the verbal stem. In the standard language, these enclitics occur after the verbal stem. [5] Compare the following examples from the dialects with the standard form:

13. Meim: bem – horūt
             pref+I _sold
             'I sold.'
    Stand: furūxt – am
             sold + I
             'I sold.'

14. Jowsh: bam – jat
             pref +I took
             'I took.'
    Stand: gereft – am
             took + I
             'I took.'

15. Meim: bem   – karda
             pref +I done
             'I have done.'
    Stand: Karde – am
             done + I
             'I have done.'

The occurrence of the objective enclitics before the verbal stem in these dialects shows two things. First it might be related to ergativity which, of course, requires more extensive investigations with reference to other Iranian dialects. Secondly, this phenomenon is an archaic feature of Persian. As Khanlari (1971:311) has shown, the same enclitics were used before the verbal stem of past transitive verbs in Middle Persian. Compare the following examples in which Middle Persian uses objective enclitics, while Modern Persian uses subjective enclitics:

16. | Middle Persian | Modern Persian | Gross |
     |---|---|---|
     | em – kard | kard – am | 'I did.' |
     | et – kard | kard – i | 'You did.' |
     | eš – kard | kard – ∅ | 'He did.' |
     | eman – kard | kard – im | 'We did.' |
     | etan – kard | kard – id | 'You did.' |
     | ešan – kard | kard – and | 'They did.' |

A comparison of the past tense formation of transitive verbs in Middle Persian and Meimeʔi and Jowshaqāni indicates that the dialects have preserved an archaic feature of Persian, while the standard language shows a tendency towards uniformation, namely, the occurrence of subjective enclitics after the verbal stem in all verbs.

In both Heimeِi and Jowshaqanī the genitive enclitics appear after the
noun as is the case in the standard language.

17. Heim: čamš̌ -- eš̌
          eye + his
          'His eye.'
    Jowsh: Kaniz -- eš̌
           maid + his
           'His maid.'

5.0. LINGUISTIC DISTRIBUTION OF ENCLITICS IN SOUTHERN TATI DIALECTS The
enclitic pronouns of the southern Tātī dialects as presented by Yār-shater
are as follows:

	Sg. 1	Sg. 2	Sg. 3	pl. 1	pl. 2	pl. 3
Cha.	-m	-i	-š̌	-mō(n)	-yō(n)	-sō(n)
Tak.	-m	-i	-s	-mon	-yon	-šon
Esh.	-m	-i	-s	-mum	-yun	-šun
Xia.	-m	-i	-s	-mun	-yun	-šun
Ebr.	-m	-i	-š̌	-nen	-yen	-sen
Sag.	-m	-i	-š̌	-nun	-yun	-šun
Dan.	-m	-i	-š̌	-mun	-yun	-sun
Esf.	-m	-i	-š̌	-mo	-yo	-so
Xoz.	-m	-i	-š̌	-mun	-yun	-šun

These enclitic pronouns function as subjective, objective and genitive.
Consider the following examples

(a) Subjective

18. Tak   Šir - em beduš̌t
          milk + I milked
          'I milked (the milk)!'

(b) Objective

19. Sag: bedi-am - eš̌
          saw + I _ him
          'I saw him.'

(c) Genitive

20. Tak: berā - m
          brother + my
          'My brother'

The most striking feature of this group of dialects is the observation
that, as an agent, the enclitic pronouns may be suffixed to a noun, an
adjective, an adverb, a verb, a pronoun or a conjunction.[6] We will present
an example for each of these cases.

(a) <u>Noun</u>

21. Xoz: dö beraš   da
              two brother + he had
              'He had two brothers.'

(b) <u>Verb</u>

22. Ebr: baši —   šon zamin
              threw + he + they+ground
              'They threw him on the ground.'

(c) <u>Adverb</u>

23. Cha: azir-öm   āš bepat
              yesterday + I aš cooked
              'Yesterday I cooked aš.'

(d) <u>Pronoun</u>

24. Cha: ay – im bind
              him + I saw
              'I saw him.'

(e) <u>Conjunction</u>

25. Xia: agar-i deruta bi
              if + you swept had
              'If you had swept (the snow).'

The distribution of objective and genitive enclitics in these dialects is not so much different from the standard language but the extended distribution of subjective enclitics may result in a semantic confusion. Consider the following example from the Takestani dialect:

26. Tak: šir – em bedušt
              milk + I milked
              'I milked (the milk).'

In sentence (26), the subjective enclitic <u>-em</u> has been attached to the object <u>šir</u> 'milk' which by a speaker of the standard language may be interpreted as <u>He milked my milk</u> or, metaphorically, <u>He sucked my blood</u>.

6.0. INTERPRETATION OF THE DATA: The comparative study of the enclitic pronouns in the varieties of Persian discussed in this paper reveals certain similarities and dissimilarities which can raise several theoretical questions. For instance, are these varieties manifestations of a "common core" or "common repertoire" which differ in their kinds of rules, the relative order of their rules, etc.? Obviously, we find a certain amount of mutual intelligibility between these dialects which may lend plausibility to this assumption. On the other hand, should we treat these varieties independently and describe each without reference to the other as if they were unrelated languages? To what

extent are the dialects and the standard language within a speech community comparable , assuming that standardization is the codification' and acceptance within a community of users, of a formal set of norms defining correct usage advanced by such agencies and authorities as the government, the educational system, the mass media, the religious institutions, etc., whereas dialects are often immune to such a type of codification.

Although the answers to the afore-mentioned questions are not so clear to us at the moment, it seems plausible to subscribe to the claim that the dialects existing within a language have grammars that are identical except at the points relevant to the particular pattern to be analysed. At these points, the comparative model displays the ways in which the dialects are similar and different. The stated differences in the grammars can generate the dialect variations at particular points.

At the abstract level, the three varieties of Persian discussed in this paper have a subjective enclitic placement rule with different surface mani- festations as shown in the following table:

Standard Language	Meime?iand Jovshaganī	Tati Dialects
V + Subj. Enclitic	V + Subj. Enclitic (present or past intrans)	V N Adj. Adv. + Subj. Pron. Enclitic Conj.

The above table summarizes the similarities and differences between three varieties of Persian at a particular point in their core-grammar. The observed differences are, in fact, responsible for variations which, from the socio- linguistic point of view, may be interpreted in terms of social or language differentiation. (Similar comparison can be presented for objective and genitive enclitics).

Our observation of the differences between the standard language and the dialects may lead us to the conclusion that there is a trend toward an overall uniformation in language as urbanization and industrialization progress. It is evident that the life in urbanized and industrial societies is in some ways more uniform than is the case in societies where local and regional particularisms are almost untouched. This position should not, however, lead us to the generalization that rural heterogeneity and urban homogeneity are mutually exclusive. As our data explicitly indicate, at the language level both uniformation and differentiation are found to exist. (Compare the lin- guistic distribution of enclitic pronouns at the points of their similarities and dissimilarities). This is to some extent an indication of the fact that the traditional and the modern (archaic features of the dialects and the change brought about by standardization of a particular variety) are combined into new constellations rather than one replaced by the other.

Considering the above discussion, one cannot claim that the villages in which these dialects are spoken are completely isolated from urban areas. What are then the factors behind keeping the dialects untouched (at least for some features)? It seems to be the case that "linguistic adoption," namely, the influence of the standard variety upon the dialects need not be "replacive," but it may remain entirely passive in the competence of the dialects' speakers. Thus, even though they have been exposed to various types of mass media, their linguistic repertoire seems to have been little influenced or not at all.

NOTES

*I am grateful to Professors B. Kachru, L. Zgusta, and H. Hock who read an earlier version of this paper.

[1]For the discussion of some of these features, see Morgenstierne (1924-31).

[2]Some of these phonological changes are vowel raising, vowel coalescence, etc. Notice the following changes from the written form to the spoken form:

   (i)   Ketabe - šan   ⟶   Ketabe-šun
          book + their

   (ii)   mixah - am   ⟶   mi-xām
          want + I

[3]In the enclitic system of Persian -aš refers to his, her and its, but I have given the masculine form in the English translation only.

[4]In this paper I have made slight changes in Lambton's transcription system like the changes of ε to e and ∫ to š.

[5]In both Meime:i and Jowshaqānī the subjective enclitic is often separated from the verb and added to a preceeding word. Consider the following examples:

   (i)   Meim: do tā γ el aš ja de·bedi
               'He saw two crows in one place.'

   (ii) Jowsh: ja baraye zane rammalbāšī hazeresun baka.
               'They prepared a place for the fortune-teller's wife.'

[6]In a personal communication, Professor Windfuhr has indicated to me that in these dialects the subjective enclitic attaches to the leftmost element and may be formulated as the "leftmost attachment rule."

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INTRODUCTION

The papers in this section all relate more or less directly to a
research project on syntactic universals being conducted at the
University of Illinois, supported by NSF Grant SOC 7500244 and by Grants
CRR 40 32 52 310 and CRR 1 40 32 52 330 from the Research Board of the
University of Illinois. The focus of this project is the investigation
of universal aspects of grammatical relations (i.e. relations like
"subject", "direct object" and so forth), rules affecting or sensitive
to grammatical relations, and rule government, though obviously these
areas cannot be fruitfully studied independently of other syntactic
matters. For the most part these papers are addressed to questions
raised by recent important work in generative grammar on grammatical
relations and associated topics in universal grammar. Important parts
of this work remain a largely oral tradition, neither published nor
even widely circulated underground, and what has been published so far
has appeared in scattered places. (For detailed references we commend
the reader to the bibliographies of the papers in this section.) So for
the convenience of readers unfamiliar with this work we provide here a
sketch of what seems to us the main thrust:

There are two main areas of interest in recent literature on
grammatical relations: the question of the nature of grammatical rela-
tions and the question of the role of these relations in syntactic rules
and the organization of grammars. On the first question the work of
Keenan is probably the best known, though not the only important work on
the topic.

Besides the skeptic's position that grammatical relations are a
figment of the linguist's imagination, there are a number of possible
positions on the nature of grammatical relations, each of which will
probably find its proponents:
A. On the definition of grammatical relations:
    1. Grammatical relations are primitives of linguistic theory,
distinct from discourse relations like "topic", "focus", and so on,
and distinct from semantic relations like "agent", "experiencer",
referential properties, and so on, though there may be correlative
tendencies; e.g. agents may tend to be subjects, and subjects may tend
to be topics; but there are subjects that are neither topic nor agent,
so the three notions are distinct.
    2. Grammatical relations are not primitive, but are definable in
terms of discourse, semantic, or other "meaning" properties, or some
combination of them.
    3. Grammatical relations are not primitive but are definable in
terms of formal grammatical properties like word order, control of
agreement, case marking, control of reflexivization and deletion, and
so on, or in structural terms like the definitions proposed by Chomsky
in Aspects.
B. On the universality of grammatical relations:
    1. The set of grammatical relations is universal, i.e. manifested
in some fashion in every human language. Recalcitrant cases like
Tagalog, where the applicability of these notions is problematic, will
yield to relational analysis as the theory is refined and our understanding

grows more sophisticated.

3. Grammatical relations are appropriate and correct for the description of some languages, but not all; so that the presence or absence of grammatical relations constitutes a major typological difference among languages. If languages can change in time from one major type to the other, then the two major types are probably not a bifurcation, but two poles on a continuum.

On the second question, the role of grammatical relations in syntactic rules and in the organization of grammars, the most influential works are probably that of Keenan and Comrie on grammatical relations and relativization (brutally simplified, they show, based on a significant sample of languages, that there is a hierarchy of relativizability Subject>Direct object>Indirect object>Object of preposition>Possessive NP>Object of comparative particle) and that of Postal, Perlmutter and Johnson toward the development of a theory of "relational grammar", an early version of which we have found quite congenial as a research tool. In this version (which may no longer reflect the views of its inventors), underlying representations (UR) are specified not in syntactic primitives like "precedes", "Dominates", etc., but in terms of relations like "subject-of", "direct-object-of", "indirect-object-of" and perhaps others (NP's which bear one of these three relations are sometimes referred to as "terms"). Order of elements is not represented at all in UR. A first group of "relation-changing rules" (Passive, Tough-movement, and raising rules are typical examples of such rules) apply to the UR (perhaps cyclically), re-assigning grammatical relations; typically promoting NP's up the hierarchy (e.g. Passive, Tough-movement) and demoting NP's to non-term status ("chômeurs"; for example, the passive agent is demoted to chômeur status; chômeurs generally seem to end up as "obliques", i.e. objects of prepositions, etc.). A second group of rules assign order to the elements of the sentence on the basis of grammatical relations; English might require something like SUBJECT+VERB+DIRECT OBJECT+INDIRECT OBJECT+CHOMEURS. A third group of rules of the familiar transformational sort, sensitive to syntactic properties like precedence and dominance, then apply; Y-movement, Particle-movement, and Question inversion are probably rules of this type. It is theoretically possible, of course, to dispense with such "syntactic" notions entirely and deal with all aspects of grammar in terms of relations between elements; this obviously involves a larger set of relations.

The measure of success of a relational approach to universal grammar lies in the answers to two questions: are there rules of syntax that must refer to grammatical relations, and are there significant cross-linguistic generalizations (or universal "laws" of the sort proposed by Postal and Perlmutter) concerning the form and organization of grammars, that can only be captured by a relational theory?

Jerry Morgan

ON THE SYNTACTIC MOTIVATION FOR A CATEGORY "CHÔMEUR"
IN RELATIONAL GRAMMAR
Gloria Sheintuch

A theory of Relational Grammar wherein grammatical relations play
a direct and central role has been proposed by David Johnson (1974)
and in unpublished work by Postal and Perlmutter. Relational Grammar
is superior in some ways to the "standard" structurally oriented Trans-
formational Grammar in that it bypasses the need for the inherently
language particular structural configurations for all rules in which
grammatical relations play a crucial role. The formulation of syntac-
tic rules in terms of changes in the grammatical relations of certain
NP's with respect to the verb allows one to make universal formulations
for each of the syntactic processes such as Passivization, Dative Move-
ment, and Subject Raising---processes which have generally been recognized
as cross-linguistically similar by linguists of various traditions. A
unitary cross-linguistic formulation for each of these rules in terms of
structural configurations is impossible for languages that differ
significantly in word order. To illustrate, the formulation of Passivi-
zation in terms of structural configurations in a SVO language such as
English and in a SOV language such as Persian, whose passive construc-
tions are generally agentless, are quite different. In English the active
sentence (1) undergoes Passivization to produce (2):

   (1) John ate the apple
   (2) The apple was eaten by John.

The Passive Transformation for English is stated in (3)

   (3) NP_1 V NP_2

      1,   2, 3 $\rightarrow$ 3, BE, 2+ ED, BY + 1

In Persian, on the other hand, the equivalent of the active sentence
(1) is (4), where -rā is the definite accusative case marker.

   (4) Jān sib-rā   xord
       'John apple-definite accusative ate
                 case marker (d.a.c.m.)
       'John ate the apple.'

(4) is Passivized to yield (5):

   (5) sib   xorde   šod
       apple eaten was
       'The apple was eaten.'

In structural terms, the Passive Transformation for Persian is more
or less as given in (6).

   (6) NP_1 NP_2 + rā   V

      1 , 2   + rā , 3 $\rightarrow$ $\emptyset$, 2, 3 +e, šod 'become'

Obviously the formulations of the two separate rules (3) and (6) do not provide the basis for capturing the generalizations that the rules have the same function in terms of changes in grammatical relations. A relational formulation of the rule of Passivization as in (7), for example, captures such a generalization:

> (7) First: the subject of the sentence is demoted so that it no longer bears any grammatical relation to the verb, and second: the direct object of the sentence becomes the new subject.[1]

In the case of English, the subject of the active sentence has been demoted to "chômeur" status, and in the case of Persian, the subject of the active sentence, too, has been demoted--deletion being an extreme case of demotion.

In a relational model of syntactic theory, structure is imposed on sentences at a point in the derivation after all relation changing rules have applied, thus avoiding any arbitrary discernment of rules as crosslinguistically related or distinct based on the criterion of structural uniformity, and consequently the problems entailed in an arbitrary classification of this type.[2]

The grammatical relations that an NP bears to a verb, in Postal and Perlmutter's model of Relational Grammar, consist of "subject" "direct object," and "indirect object." In a sentence, the NP's bearing such relations to the verb are called "terms" (as opposed to "non-term" NP's such as instrumental and locative prepositional phrases). As mentioned before, if an NP ceases to bear any grammatical relation to its verb then it acquires the status of a "chômeur" or 'unemployed'. A chômeur cannot be advanced by a relation-changing rule that advances terms only; i.e. Passivization, Dative-Movement, A-Raising, B-Raising, etc. ("Advancement" refers to a change in the grammatical relation of an NP to its verb to one whose position is higher on the Relational Hierarchy and/or to one that bears a grammatical relation to a higher verb.[3]) The characteristic of chômeur given above is circular in that it is a natural extention of the definition of chômeurs. If a chômeur no longer bears a grammatical relation to the verb then it cannot be sensitive to rules which apply to terms only, since by virtue of its definition a chômeur is a non-term. Also chômeurs generally do not trigger agreement rules since normally terms, rather than non-terms, do so.[4] Again, the above generalization, like the one before it, cannot be used as evidence motivating the use of chômeur. One cannot motivate a syntactic relation by showing that all its members share in common certain definitional properties; in other words the definitional properties of a class cannot constitute evidence for positing the class, unless these properties are unique to the relation.

This paper is mainly concerned with the issue of whether a category "chômeur" is empirically motivated in Relational Grammar, or whether it is merely an artifact of the theory, void of any unity in syntactic behavior, such that correct empirical predictions cannot be made using the notion. By positing a notion "chômeur", Postal and Perlmutter are in effect claiming that NP's so defined will have a variety of syntactic

properties in common, just as subjects, direct objects, and indirect
objects do. The motivation of chômeurs as a syntactic relation is an
empirical issue; chômeurs within several diverse languages should be
examined in order to determine whether indeed the use of such a relation
enables one to capture significant generalizations about the syntac-
tic properties of NP's defined as chômeurs irrespective of their source---
propertiesthat would otherwise appear to be spuriously related. If
chômeurs within a single language vary entirely in all syntactic proper-
ties, depending on their underlying grammatical relation source, then
the status of the chômeur as a distinct relation is considerably weaken-
ed--since the properties that motivate it are not those that can be
traced back to its specific underlying relation. On the other hand,
if there turns out to be sufficient language specific justification for
the relation as such, then the various language particular syntactic
properties of the relation should be studied cross-linguistically in
an attempt to extract universal generalizations about it.

In this paper it will be shown that chômeurs in Persian have in
common at least one syntactic property (involving superficial word
order) that is independent of the definition of chômeurs, thus consti-
tuting syntactic evidence for the category.

A relationally oriented study of some syntactic processes in Per-
sian reveals that reference to a category chômeur makes possible the
formulation of generalizations about constraints on word order that would
otherwise be extraordinarily complicated. Persian normally has a SOV
word order. However, word ordering is relatively free in the language,
in that the subject and object NP's can appear in any position with re-
spect to each other in surface structure, depending on pragmatic fac-
tors, involving rules such as Topicalization, which moves an NP to sen-
tence initial position. Thus another variation of sentence (4) is (8).

(8) sib-rā   jãn xord
     apple-d.a.c.m.   John ate
     'John ate the apple'

In (9) the direct object precedes the subject. Likewise, the word
order between direct object and indirect object in Persian is free, in
the sense that it too is pragmatically conditioned. Thus a sentence like
(9) has its syntactic variant in (10).[5]

(9) parviz sib-rā   be-bače   dãd
     parviz apple-d.a.c.m. to-child gave
     'Parviz gave the apple to the child.'

(10) parviz be-bače sib-rā dãd

where the indirect object precedes the direct object. However, Topi-
calization of the direct object in (9) or (10) results in (11), while
the Topicalization of the indirect object in (9) or (10) results in
(12):

(11) sib-rā   parviz be-bače dãd
     'The apple Parviz gave to the child.'

(12). be-bače   parviz   sib-rā   dād
     'To the child Parviz gave the apple.'

Thus, if one were to describe the various possible superficial word
orderings among the different NP's in sentences of Persian, it seems
that one could state that the NP's may appear in any order with respect
to each other, provided that the subject is not preceded by more than one
NP. It therefore follows that sentences are ungrammatical if the sub-
ject appears after both the direct and indirect objects, as sentences (13)
and (14) indicate (where sib-rā is the direct object, be-bače the in-
direct object, and parviz the subject), or if the subject appears after
both a term and a non-term, as indicated by (16) (where nāme-rā is the
direct object and bā-medād is an instrumental):

    (13) *sib-rā   be-bače   parviz   dād
         ('The apple to the child Parviz gave.')

    (14) *be-bače   sib-rā   parviz   dād
         ('To the child the apple Parviz gave.')

    (15) *bā-medād   nāme-rā   parviz   nevešt
         ('With pencil the letter Parviz wrote.')

The grammatical usual ordering of (15) is as in (16):

    (16) Parviz   nāme-rā   bā-medād   nevešt
         Parviz   letter-d.a.c.m.   with-pencil   wrote
         'Parviz wrote the letter with a pencil.'

    Having made the generalization that superficial ordering of NP's
in sentences of Persian is restricted such that the subject may not
be preceded by more than one NP, one finds exceptions to such a statement.
There are sentences which are ungrammatical only on account of word
ordering, even though the subject is preceded by only one NP so that
there seems to be no violation of the constraint on word order dis-
cussed above. An example of such a sentence is (17).

    (17) *sib   parviz   bače-rā   dād
         apple   parviz   child-d.a.c.m. gave
         ('An apple Parviz gave the child.')

(17) is supposed to be the Topicalized version of (18):

    (18) parviz   bače-rā   sib   dād
         'Parviz gave the child an apple.'

sib in (18) has been Topicalized to produce the ungrammatical sentence
(17). Notice that (18) is the Dative-Moved version of (9). Working
within the framework of Relational Grammar, the Dative Movement rule
relating sentence (9) to (18) can be formulated as follows:

    (19) Dative-Movement promotes an indirect object NP to the posi-

tion of direct object, "kicking out" the direct object into chômeur status.

The term "promotion" is used, since the indirect object NP assumes a higher position on the Grammatical Relations hierarchy--that is to say, the NP moves up the hierarchy from the status of an indirect object to that of direct object. Thus in (18) sib meaning 'apple' becomes a chômeur. It seems, then, that there is a further restriction on the rule of Topicalization in Persian, namely that chômeurs may not appear in front of a subject. Thus sentences such as (17) are blocked. However, an examination of more sentences in Persian shows that the constraint on chômeur placement is even stronger. No chômeur can appear before any term within a given sentence. Thus (18) does not have a syntactic variant where the order between sib meaning 'apple' and bače-rā meaning 'the child' is switched, as is indicated by the ungrammatical sentence (20):

    (20) *parviz sib bače-rā dād
        ('Parviz an apple gave the child')

The question arises at this point of whether or not chômeurs be-have differently from non-terms (which never were terms in a derivation) with respect to the above constraint on word order. If it turns out that they do, then there is strong evidence that the property "chômeur-hood" --that is to say ex-termhood, as opposed to non-termhood, is crucial, thus motivating the use of the category "chômeur." In Persian non-terms, (as opposed to chômeurs), such as locative or instrumental prepositional phrases are not subject to the same constraints that chômeurs are. Consider for example two variants of (16), (21) where the non-term bā-medād is Topicalized, appearing before both the subject and the direct object and (22) where the non-term bā-medād appears in front of the direct object:

    (21) bā-medād   parviz   nāme-rā nevešt

    (22) parviz bā-medād nāme-rā nevešt

The above examples serve as evidence that the property nonterm-hood, which is common to prepositional phrases and chômeurs is not sufficiently discriminatory in the word ordering behavior of the NP's in question, and that the significant dichotomy is the one between ex-terms and non-terms, thus strongly motivating a category "chômeur" separate from 'non-terms."

At this point one should entertain the possibility that this constraint on chômeur placement may very well not be a general one in the language, but one operating on only the Dative-Moved chômeurs. Such a constraint would not be general enough to warrant the treatment of chômeur as a distinct category. On the other hand, if one were to find that chômeurs derived from grammatical relations other than direct objects, and chômeurs derived as a result of syntactic processes other than Dative Movement, were constrained in their linear distribution in the same way as the chômeurs derived via Dative Movement, then it would

strengthen the claim that chômeurs constitute a unified distinct cate-
gory in Persian, and, by induction, perhaps in universal grammar.

Unfortunately, Passivization in Persian does not provide a test, for
it does not result in chômeurs, the passives in this language being
generally agentless. The remaining relation changing rules that derive
chômeurs are the Subject Raising rules.[7] Subject Raising into subject
position, henceforth A-Raising, operates on deep structures such as (23)
to yield surface forms such as (24):

    (23) [parviz   šāgerd   ast] benazaram miresad
         [parviz   student is]   seems to me
         (' [Parviz is a student] seems to me.')

    (24) parviz šāgerd   benazaram miresad[8]
         parviz student   seems to me
         'Parviz seems to me to be a student.'

A relational account of the Subject Raising process is as follows:

    (25) The subject of the complement clause assumes the grammatical
         relation held by that clause, while the rest of the complement
         clause is demoted to chômeur status.

Thus šāgerd meaning 'a student' in (24) plays the role of a chômeur.
Again, the order of NP's is constrained so that šāgerd may not appear
sentence initially, as indicated in (26):

    (26) *šāgerd parviz benazaram miresad
         ('A student Parviz seems to me.')

Likewise, Subject Raising into object position, or B-Raising, would be
considered a sub-case of (25), and would relate deep structures such as
(27) to surface forms like (28):

    (27) man [parviz   šāgerd   ast] hesāb mikonam.
         I   [parviz   student is]   consider
         ('I[Parviz is a student]consider.')

    (28) man parviz-rā   šāgerd hesāb mikonam.
         I   parviz-d.a.c.m. student   consider
         'I consider Parviz to be a student.'

In (28) also šāgerd is defined as a chômeur, and as such, is expected
to be constrained in word order to a position after the terms in the
sentence--in this case, after the subject and the direct object. Indeed,
we see that (29) and (30) are ungrammatical since the chômeur, šāgerd
precedes other terms within the sentence.

    (29) *šāgerd man parviz-rā hesāb mikonam
         ('A student, I consider Parviz.')

(30) *man šāgerd parviz-rā hesāb mikonam[9]
('I, a student consider Parviz.')

We have seen that at least with respect to surface word ordering in Persian, the category "chômeur is empirically motivated. The question arises as to what other kinds of properties ought to count as evidence for the category chômeur. I suspect that while the properties unifying chômeurs will inevitably vary among languages they will be restricted to relational and/or structural syntactic properties. In any case it is the syntactic properties that chômeurs have in common that motivate the need for introducing the category into the framework of Relational Grammar.

Footnotes

This paper was originally presented at the XIVth Southeastern Conference on Linguistics. I am especially grateful to Georgia Green, Jerry Morgan, and Peter Cole for helpful discussion and comments.

[1] (7) is not Postal and Perlmutter's or David Johnson's version of Passivization. The differences, in the various relational formulations of the rule, presented so far in the literature, with their respective merits and/or weak points, are irrelevant to the issues discussed in this paper. The formulation in (7) is discussed in Keenan (1975).

[2] See Sheintuch (1975-a) for a clear discussion of the possible problems entailed in discerning rules as related or unrelated on structural grounds alone. The relational model avoids arbitrary distinctions based on structural configurations both on the cross-linguistic and the language internal levels of rule analysis.

[3] The developers of relationally based models of grammar hypothesize that there are certain universals constraining the grammatical relation changing rules; one of the tentative universal constraints stated so far makes generalizations with respect to a Grammatical Relations hierarchy. This Relational hierarchy is parallel to the Keenan-Comrie hierarchy which orders grammatical relations according to their accessibility to certain syntactic strategies with a focusing function—strategies such as Relativiation, WH Question formation, and Clefting. Both hierarchies start as follows:

(i) subject > direct object > indirect object > . . .
with subject being the most highly accessible position.

[4] Some chômeurs can control agreement, and there are versions of Relational Grammar (i.e. Postal and Perlmutter) that allow for this. However, this paper is not concerned with the issue. Whether or not certain chômeurs act like other non-terms with respect to agreement on the verb, does not effect the arguments that motivate it as a syntactic category.

[5] (9) is the more usual word order. However, it seems that "old

information" comes before "new information", provided that the sentence
carries a normal stress pattern. Thus (9) would be a more appropriate ans-
wer to the question 'Who did Parviz give the apple to?' and (10) to the
question 'What did Parviz give to the child?' Also the free word order
holds not only between terms, but also between terms and non-terms
(prepositional phrases), the ordering being subject to the same prag-
matic conditions.

[6] Note that Dative Movement does not necessarily move with respect
to each other the NP's involved in the rule, but only changes the gram-
matical relation of the NP's with respect to the verb, so that (20)
would be expected to be the normal grammatical word order.

[7] For a detailed discussion and motivation of the rules see Sheintuch
(1975-b)

[8] There is another syntactic variation of A-Raised sentences in Persian,
that is of no relevance to the discussion in this paper.

[9] (29) may be slightly worse than (30), since in (29) the chômeur
is placed before two terms, thus the constraint in question is more se-
verely violated than in (30), where the chômeur appears before one
term only. For similar reasons (20) may be slightly better than (18).

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PASSIVIZING LOCATIVES IN OLUTSOOTSO*

Gerard M. Dalgish

Introduction:

This paper examines and discusses sentences in which locative noun phrases become derived subjects of passivized verbs in the OluTsootso dialect of OluLuhya, a Bantu language of Kenya. Although many of the sentences to be quoted below range from ungrammatical to unacceptable to speakers of English, they are considered quite natural in OluTsootso, and have not, to my knowledge, been investigated so extensively in other Bantu languages.

The fact that such locative noun phrases can be passivized, and otherwise bear grammatical relations to verbs, is of some interest and importance to the current theory of relational grammar espoused by Postal and Perlmutter in various unpublished works, and in Johnson, 1974. Some aspects of the theory and its relation to the data and analysis presented here are discussed.

Section I outlines the morphology of OluTsootso nominal and locative constructions, and the morphology and syntax of the passive. Section II discusses the passivization process involving locatives, pointing out similarities and differences between it and that of English. A more general account of passive is proposed, and explanations for the differing facts found in English and OluTsootso are suggested.

I.1. In this section, I will discuss the morphological structure of nouns and locative noun phrases (henceforth LOC NP's) in order to familiarize the reader with the examples to be cited in the discussion. To begin with, regular (non-LOCative) nouns occur with one prefix (often referred to as a "noun class prefix"), followed by a root. Thus, omusaala, 'tree', consists of a prefix (in this case, of noun class 3) omu-followed by the root -saala, denoting 'tree'. The plural is emisaala, 'trees', which is composed of the prefix emi- (cl.4) signalling plural, followed by the root -saala.

There are three locative prefixes (LOC-pfx), each referring to different locations. The locative prefix /ha/, class 16, refers to general location 'near, at'. The class 17 locative prefix is /xu/, usually meaning 'on, onto'. The class 18 LOC-pfx /mu/ denotes 'in, inside'.

The morphological structure of a LOC-NP for the purposes of this paper consists of a LOC-pfx followed by a reduced form of the regular non-locative noun class prefix, followed by the root. The non-LOC noun prefixes usually occur without the initial vowel in this reduced form in the LOC-NP. Thus, a locative expression for omu-saala, 'tree', consists of a LOC-pfx(ha-, xu-, mu-) followed by -mu- (a reduced form of the

class 3 prefix /omu/) followed by -saala, the root for 'tree'. Thus,

Loc-pfx	cl.3 prefix	root	gloss
ha-	-mu-	-saala	'near the tree'
xu-	-mu-	-saala	'on the tree'
mu-	-mu-	-saala	'in the tree'

Locative expressions for emisaala, 'trees', would be ha-mi-saala 'near the trees', xu-mi-saala 'on the trees', and mu-mi-saala 'in the trees'. Other examples which will appear in this paper are muu-n-zu 'in the house' (</mu-iN-tsu/)[1] and ha-shi-iro 'near the market' (</ha-eshi-iro/); these form the general model for the formation of LOC-NP's in OluTsootso.

I.2. LOC-NP's, like non-LOC-NP's, also govern agreement processes on verbs. When a non-LOC-NP is the subject or object of a verb, a verbal prefix "agreeing" with the class of the NP will appear on the verb. In many cases, the verbal prefix is phonologically similar to the class prefix of the antecedent NP. Consider the following examples of this:

(1)   aBa - saatsa   Ba - lol - aanga[2]   eBi - taBo
       cl.2-man   cl.2-see-tense/aspect   cl.8-book
       'The men see the books'

Note that the class 2 noun prefix /aBa/ is quite similar to the class 2 subject marker /Ba/ preceding the verb root /lol/.

Object prefixes follow subject prefixes and precede verbal roots. Pronominalizing eBi-taBo, 'books', the object of sentence (1) above, results in the appearance of the object prefix /Bi/:

(2)   aBa - saatsa   Ba- Bi- lol- aanga
       cl.2-man   cl.2-cl.8 - see-T/A
       'The men see them'.

LOC-NP's can govern subject agreement as in the following active sentences:

(3)   Muu - n - zu   mu-Bal- aanga
       LOC-cl.9-house   LOC-be warm-T/A
       'In the house (it) is warm'

(4)   Ha - shi - iro   ha - hun - aanga
       LOC-cl.7-market   LOC-smell-T/A
       'Near-the-market (it) smells'

(5)   Xu - mu - saala   xu- um-aanga
       LOC-cl.3-tree   LOC- be dry- T/A
       'On-the-tree (it) is dry'

There is also a locative verbal suffix (LOC-sfx) which agrees with a LOC-NP. The conditions under which the LOC-sfx appears is a topic which I discuss elsewhere[3]. The LOC-sfxes appear after the verbal word, and "agree" with the antecedent LOC-NP. Morphologically, a LOC-sfx consists of a LOC-pfx followed by o; rules of glide formation and vowel coalescence[4] account for the surface forms. Thus, the Loc-sfx for class 16 is -ho (< /ha-o/); class 17 is -xwo (< /xu-o/), and class 18 is -mwo (< /mu-o/). When a LOC-NP is pronominalized, the LOC sfx appears on the verb, as in the following:

(6a)   a- kwiits- aanga   muu- n- zu   'He falls in the house"
        cl.1-fall-T/A   LOC-cl.9-house

(6b) => a-kwiits- aanga- mwo
        cl.1-fall-T/A- LOC sfx
        'He falls in-there'

(7a)   li-ul- aanga   ha-shi-iro

```
(7a)    li-ul- aanga      ha-shi-iro
        cl.5-arrive-T/A   LOc-cl.7-market
        'It (cl. 5) arrives at the market'
(7b) => li -ul- aanga -ho
        cl.5-arrive-T/A-LOC sfx
        "It arrives at-there'
(8a)    enz- its- aanga xu-mu- saala
        I - come -T/A     LOC-cl.3-tree
        'I come on to the tree'
(8b) => enz-its-aanga - xwo
        I - come-T/A- LOC sfx
        'I come on-there'
```

It is important to note that the pronominalization of the LOC NP's
which follow these intransitive verbs does not result in the appearance
of object prefixes agreeing with the deleted LOC NP. This is further
illustrated by the ungrammaticality of the (c) sentences below, in which
pronominalization of the post verbal LOC NP's appearing in the correspon-
ding (a) sentences is attempted by using the appropriate LOC object pre-
fix:

```
(6c)    *a-mu-kwiits-aanga
        cl.1-LOC-fall-T/A
(7c)    *li-ho-ol-aanga
        cl.5-LOC-arrive-T/A
(8c)    *e-xw-iits-aanga
        I-LOC-come-T/A
```

It is the case, however, that object prefixes can agree with LOC
NP's. This occurs when LOC NP's are dislocated (cf. below, sentence
17), and is a subject of a forthcoming paper.

     The preceding discussions and examples show that LOC NP's are capable
of bearing grammatical relations to verbs by virtue of the appearance
of verbal locative subject prefixes, object prefixes (in the dislocation
case), and LOC suffixes. But since the pronominalization of post
verbal LOC-NP's does not result in the appearance of locative object
prefixes (the LOC-sfx appears instead), there is some motivation for
claiming that post verbal LOC NP's do not have the full range of relational
properties associated with true, or full objects. This will have some
impact on later discussions.
I.3. In this section we shall examine the morphology and syntax of the
passive. Consider first these examples of the passive, in which the
(a) sentences are the active counterparts of the passivized (b) sentences:

```
(9a)    Keeya    a-xup - aanga     aBa-ana
        K.       cl.1-beat-T/A     cl.2-child
        'Keeya beats the children'
(9b) => aBa- ana   Ba- xup - uungwa[5] neende Keeya
        cl.2-child     cl.2-beat - PSV, T/A  by K.
        'The children are beaten by Keeya'
(10a)   Ombooka    a- lol-aanga    in-zu
        O.    cl.1-see-T/A    cl.9-house
        'Ombooko sees the house'
(10b)=> In- zu   yi- lol - uungwa[5] , neende   Ombooko
        cl.9-house   cl.9-see-PSV, T/A  by O.
        'The house is seen by Ombooko'
```

The preposition <u>neende</u> means 'by', 'with' and 'and'. Note that the derived subjects of the (b) sentences govern subject agreement on the passivized verb.

The passive in OluTsootso therefore is quite similar to the English rule in terms of movement, subject agreement, and the appearance of a preposition preceding the logical subject. There are however some interesting differences which are discussed below.

II.1. The passive in OluTsootso differs from the English process in that LOC-NP's can become the grammatical subjects of a passivized verb, while the logical subject becomes the object of the preposition <u>neende</u>. When this happens, both the subject prefix and the LOC-sfx agreeing with the derived subject LOC-NP must appear on the verb. In the following, the (a) sentences are the active counterparts of the passive(b) sentences, which henceforth I call "LOC PSV I" sentences:

(11a)   esie en-deer-aanga   eshi-taBo <u>mu-shi-iro</u>
       I   I-bring-T/A   cl.7-book   LOC-cl.7-market
       'I bring the book <u>in the market</u>'

(11b)=> <u>Mu-shi-iro</u> mu-leer-uungwa-mwo eshi-taBo neende esie
       <u>LOC-cl.7-market</u> LOC-bring-PSV,T/A-<u>LOC sfx</u> cl.7-book by I
       '<u>In the market</u> is brought the book by me'

(12a)   Keeya a-reets-aanga eBii-ndu   xuu-n-zu
       K.   cl.1-put-T/A   cl.8-thing   <u>LOC-cl.9-house</u>
       'Keeya puts the things <u>on the house</u>'

(12b)=> <u>Xuu-n-zu</u> xu-ree-Buungwa-xwo eBii-ndu neende Keeya
       <u>LOC-cl.9-house</u> LOC-put-PSV,T/A-<u>LOC sfx</u> cl.8-thing by K.
       '<u>On-the-house</u> is put things by Keeya'

(13a)   aBa-saatsa   Ba-xol-aanga emi-limo   haa-n-zu
       cl.2-man   cl.2-do-T/A   cl.4-work   <u>LOC-cl.9-house</u>
       'The men do the work <u>around the house</u>'

(13b)=> <u>Haa-n-zu</u>   ha-xol-uungwa-ho   emi-limo neende .aBa-saatsa
       <u>LOC-cl.9-house</u> LOC-do-PSV,T/A-<u>LOC-sfx</u> cl.4-work by cl.2-man
       '<u>Around-the-house</u> is done the work by the men'

Passivized(b) sentences which (a) fail to have the subject agreement with the locative subject (b) do not appear with the LOC-sfx, and (c) do not have the preposition <u>neende</u> are all ungrammatical.

Other transitive verbs which have been investigated so far and allow LOC PSV I to apply are /rum/,'send'; /luum/,'push';/lex/,'leave(s.t.) behind';/haandik/,'write/yiini/,'take away from';/ey/,'sweep';and /umbax/,'build'. Some of the non-directional transitive verbs require that the applied suffix appear in the passivized sentence: /iB/, 'steal';/ruung/,'pay';/Bax/,'smear'[6] /chiing/,'carry';/xup/,'beat'; /ir/,'kill';/el/,'select', and /lol/,'see'. The applied suffix in these cases seems to signify that the action is taking place more specifically at the location expressed by the LOC NP, in both the active and passive sentences,[7] but this is a very subtle and elusive concept and has not been completely understood at this time.

II.2.1. LOC-NP's which appear after intransitive verbs in active sentences can become subjects of passive forms of these intransitives. Some sentences in which this occurs are given below; as before, the (a) sentences are active and correspond to the passive (b) sentences:

(14a)   Tsi - siimba   tsi-injil-aanga <u>muu-n-zu</u>
       cl.10-lion cl.10-enter-T/A   <u>LOC-cl.9-house</u>

'Lions enter into the house'
(14b)=> Muu-n-zu mw-iinjil-uungwa-mwo neende tsi-siimba
LOC-cl.9-house LOC-enter-PSV, T/A-LOC sfx by cl.10-lion
'In the house is entered by the lions'
(15a) ...aBa-xasi Ba-tsiits-aanga ha-mu-chela
cl.2-woman cl.2-go-T/A LOC-cl.3-river
'The women go near the river'
(15b)=> Ha-mu-chela ha-tsii-Buungwa-ho neende aBa-xasi
LOC-cl.3-river LOC-go-PSV, T/A-LOC sfx by cl.2-woman
'Near the river is gone by the women'
(16a) Lii-noni li-pulush-il-aanga[8] xu-mu-saala
cl.5-bird cl.5-fly-applied-T/A LOC-cl.3-tree
'The bird flies on-to the tree'
(16b)=> Xu-mu-saala xu-pulush-il-uungwa-xwo neende lii-noni
LOC-cl.3-tree LOC-fly-applied-PSV, T/A-LOC sfx by cl.5-bird
'On-to the tree is flown by the bird'
    As before, each of the LOC verbal elements in the passivized sentences
must agree with the LOC-NP.' Passivized sentences without the LOC sfx
or without neende are ungrammatical. Other intransitive verbs which allow
LOC PSVI are /cheend/'travel';/aful/[9] and/mool/,'crawl'; /ku/,'fall';
/siil/,'jump'; /siinjil/, 'stand'; /tuux/,'come to, arrive'; /ixal/,
'sit'; and /rul/'come out'. LOC PSV I cannot be formed for /its/, .
'come'; /sikam/,'kneel'; /toong'/, 'be left'; /sit/, 'move'.
II.2.2. I shall next discuss the notion of transitivity vis-a-vis the
locative data cited just above. I have been referring to the verbs
in this section (II.2.1.) as "intransitive" simply because of the tradi-
tional nature of the term. If the defining characteristic of transitivi-
ty is taken to be the ability of the verb to be followed by a direct
object, then the verbs listed above are intransitive. As one would
expect, a non-LOC NP can never occur after these verbs in their simple,
non-derivationally-suffixed forms. Secondly, a reasonable test for deter-
mining object-hood (and thereby the transitivity of the verb involved) would
seem to be whether or not an NP can trigger object agreement. In OluT-
sootso, this pronominalization process involves a feature copying and
deletion process, such that an object prefix appears after the subject
prefix, agreeing with the pronominalized NP (in class number or "gender").
Thus, in the following sentence, Keeya is the direct object, and may
govern object agreement, (as in (17b)), while ama-fuura, 'oil', is not
the direct object, and may not be pronominalized in this way (as the un-
grammaticality of (17c) shows:
(17). esie em-bax-aanga Keeya ama-fuura
      I I-smear-T/A K. cl.6-oil
      'I smear Keeya with oil'
(17b) esie e-mu-Bax-aanga ama-fuura
      I   I-him-smear-T/A cl.6-oil
      'I smear him with oil'
(17c) *esie en-ga-Bax-aanga Keeya
      I   I-cl.6-smear-T/A K.
      'I smear Keeya with it/I smear it on Keeya'
Now, since only LOC NP's can appear after the verbs of section II.2.1., then
LOC NP's are the only possible candidates for object-hood. But as we have
seen in section I.2., LOC NP's do not trigger the appearance of verbal

object prefixes in pronominalization, and therefore fail to qualify
as true direct objects. Thus, the verbs in question must still be
considered intransitive, since the only possible candidates for direct
objects of these verbs - the LOC NP's - fail to qualify as direct objects.

But if instead the test of transitivity is whether or not gram-
matical terms may follow verbs, then these verbs would be considered
transitive. This is because there is evidence that LOC NP's are terms
(a point which will be discussed in greater detail below). Now, if
this position is adopted, notice that it is still necessary to claim
that the verbs of this section (II.2.1) must have selectional restric-
tions reminiscent of "intransitives", namely, that they may not be
followed by non-LOC NP's. Since post-verbal LOC NP's do not behave
like true direct objects (with respect to pronominalization), then it
is still necessary to distinguish between the types of terms which may
follow a verb. Thus, the verbs of this section may be followed only by
LOC NP's (which are terms, but not direct objects), whereas the "tran-
sitive" verbs of section II.1. may be followed by direct objects (non-
LOC terms) and by LOC NP's.

In the discussions that follow, I will continue to refer to the
verbs of this section as "intransitive" verbs, solely for the conve-
nience of distinguishing between the correspondences encountered between
English transitive and intransitive verbs.
II.5. I would now like to develop an explanation for the fact that a
passivization process like LOC PSV I exists in OluTsootso, but no ana-
log is found in English. In doing so, I hope also to account for the
fact that intransitive verbs can be more freely passivized in OluT-
sootso, and less freely in English.
II.5.1. To begin with, it is quite necessary to claim that OluTsootso
sharply distinguishes LOC-NP's from prepostional phrases. Morphologi-
cally, LOC-NP's resemble "compound" nouns, in that a LOC prefix is followed
by a reduced form of the nominal class prefix: /xu-eshi-iro/
--> xu-shi-iro 'on the market'. Prepositional phrases, on the other hand,
consist of a preposition separable from a following NP, while there is
no reduction of the nominal class prefix: neende eshi-iro 'with the
market'; xulua omu-saatsa 'for the man'. Furthermore, a LOC NP forms a
word unit, whereas prepositional phrases are at least two words.

Morpho-syntactically, LOC NP's occupy noun classes of their own, and
govern certain agreement phenomena[11] : xu-shi-iro yu-xwo 'on that market
there'. Prepositional phrases, on the other hand, do not govern any of
the extensive concordial agreement processes of the language.

Syntactically, LOC NP's hold grammatical relationships with their
verbs, in the sense that verbs can be marked to agree with LOC NP's as
subjects (3) and dislocated objects (18b):
(3)   Haa-n-zu ha-Bal-aanga
        LOC-cl.9-house LOC-be warm-T/A
        'Near the house (it) is warm'
(18a)   a-leer-aanga eBi-taBo mu-shi-iro
        cl.1-bring-T/A cl.8-book Loc-cl.7-market
        'He brings the books in the market'
(18b)=> Mu-shi-iro yu-mwo,a-mu-leer-aanga-mwo eBi-taBo
        LOC-cl.7-market DEM.-LOC, cl.1-LOC-bring-T/A-LOC cl.8-book
        'In the market there, he brings (there-in) the books'

Prepositional phrases, on the other hand, do not govern verbal agree-
ment and therefore do not bear grammatical relations to their verbs.
LOC NP's may be relativized, but prepositional phrases may not:

(19) . mu-shi-iro   o-mw-a   Keeya   ye-enjil-aanga
       LOC-cl.7-market RM-LOC-RM[12]   K. cl.1-enter-T/A
       'In the market in-which Keeya enters'

(20)   *neende omu-Bano   o-kw-a Keeya a-xalak-aanga iñ-ama
        with, by cl.6-knife RM-cl.6-RM K. cl.1-cut-T/A cl.9-meat
        'With the knife which Keeya cuts the meat . . .'

LCC NP's can be further distinguished from prepositional phrases
by considering the syntactic behavior of the nouns which appear after
the LOC prefixes in LOC NP's as compared to the NP's which are, in
traditional terms, the "objects" of the prepositions. The relativiza-
tion facts below indicate that although nouns of the LOC NP's can be
extracted and relativized, objects of prepositions may not:

(21)   Eshi-iro   e-shy-a   Keeya ye-enjil-aanga-mwo
       cl.7-market RM-cl.7-Rm   K. cl.1-enter-T/A-LOC sfx
       The market which Keeya enters in . . .'

(22)   *Omu-Bano o-kw-a Keeya a-xalak-aanga iñ-ama neende
        cl.3-knife RM-cl.3-RM K cl.1-cut-T/A cl.9-meat with
        'The knife which Keeya cuts meat with . . . '

Sentence (22) is also ill-formed:

(23)   *Omu-Bano   neende o-kw-a Keeya a-xalak-aanga iñ-ama
        cl.3-knife with RM-cl.3-Rm K cl.1-cut-T/A cl.9-meat
        'The knife with which Keeya cuts the meat . . .'

Thus, OluTsootso LOC NP's are distinguished from prepositional
phrases morphologically, morpho-syntactically, and syntactically. The
generalizations seem to be that LOC NP's are more "free" than prepo-
sitional phrases, and higher on the Keenan and Comrie Accessibility
Hierarchy, at least with respect to relativization and extraction.

This distinction continues to be found with respect to the
grammatical relations hierarchy, where again it seems necessary to place
LOC NP's above prepositional phrases. LOC NP's can occur as subjects
and objects of verbs, they can be A-raised and tough-moved[13], and of
course they may be passivized. The situation is quite different for the
oblique prepositional phrases, which are considered "non-terms" by
Postal and Perlmutter. In OluTsootso, such prepositional phrases bear
no grammatical relations to verbs, while movement and other syntactic
processes are more sharply restricted.

In light of this discussion concerning the status of LOC NP's
as "terms", it is no longer surprising to find that LOC NP's undergo
a passivization process like LOC PSV I in OluTsootso. Certainly passive
moves non-prepositional nouns and noun phrases in both English and Olut-
sootso. And since LOC NP's in OluTsootso can be independently motivated
as grammatical "terms" (bearing grammatical relations to verbs), while
prepositional phrases are non-terms, then a process like passive which
affects grammatical "terms" should move LOC-NP's but not prepositional
phrases in OluTsootso. As the numerous examples of LOC PSV I show, LOC
NP's are moved by a passivization process. But, as expected, preposi-

tional phrases may not become the subjects of passivized verbs:

(23a)   esie   e-xup-aanga   aBa-ana   xulua   omu-saatsa
         I   I-beat-T/A   cl.2-child   for   cl.1-man
        'I beat the children for the man'

(23b)   * Xulua omu-saatsa a -xup - uungwa aBa-ana neende esie
        For cl.1-man cl.1 ^{xu} -beat-PSV,T/A cl.2-child by   I
                 xu?

       'For the man is beaten the children by me'

       (i.e., The man has the children beaten (for himself) by me)
Once again, LOC NP's can be shown to be grammatical terms, whereas pre-
positional phrases cannot be so analyzed.
II.5.2. Turning now to English, we note first of all that the dis-
tinction between LOC NP's and prepositional phrases has been collapsed
in favor of the prepositional phrases, with the exception of prono-
minalized locative expressions like 'there','here'. and 'home', etc. That
is, the English locative expressions corresponding to the OluTsootso LOC
NP's are all prepositional phrases ('in the house', 'at the river',
etc.) Because of its morphology, OluTsootso has a distinction which English
does not.

      Since non-term prepositional phrases cannot undergo passive, we
see at once why English has no process corresponding to OluTsootso LOC
PSV I. This is because English locative expressions form a subset of
the prepositional phrases in the language, and since no prepositional phrases
can be passivized, obviously therefore no English locative noun phrases
can be passivized.

      Closely connected to the above is the fact that "intransitive"
verbs undergo a passivization process in OluTsootso (LOC PSV I) but
intransitive verbs undergoing passivization in English are much more rare.
(I shall discuss below a proposal for the passivized intransitives that
do occur).This again would be due to the status of LOC NP's as gram-
matical terms in each language. Since LOC NP's are terms in OluTsootso,
their occurence after "intransitive" verbs in underlying active sentences
allows them to undergo LOC PSV I. But in English, intransitive verbs can
be followed by locative expressions, but the locatives will almost
always be morphological prepositional phrases. Since prepositional
phrases hold no grammatical relations to their verbs, the locatives can
never become subjects by passive. Since there is usually no other NP after
an intransitive verb to be moved by passive, there are simply fewer
instances in which intransitives are passivized.

      Notice then that the scarcity of passivized intransitives in English
follows from the principle concerning the status of prepositional phrases
as non-term elements. If a verb can be followed only by prepositional
phrases (as in English intransitives) then passive does not apply
because that rule never affects the non-term prepositional phrases. But
if a verb can be followed by a term, then passive may apply. The latter
is the case for OluTsootso's "intransitive" verbs which can undergo
LOC PSV I when non-prepositional LOC NP's follow. Both languages prevent
passivization when prepositional phrases follow underlying active verbs.
II.3. The noun of the LOC NP may be extracted from the locative ex-
pression and become the subject of a passivized verb. When this takes
place, the noun of the LOC NP governs the subject agreement on the verb,
while the appropriate LOC sfx also appears. The following passive sen-

tences are derived from the active sentences of (11-14a) above. For
convenience, I will number the sentences in which the noun of the LOC
NP has been extracted as "(c)" sentences of the corresponding active
(a) sentences cited earlier:

(11c) Eshi-iro   shi-leer-uungwa-mwo   eBi-taBo   neende   esie
       cl.7-market   cl.7-bring-PSV,T/A-LOC sfx   cl.8-book by I
       'The market is brought in(to) books by me'

(12c) In-zu   yi-ree-Buungwa-xwo   eBii-ndu   neende Keeya
       cl.9-house   cl.9-put-PSV,T/A-LOC sfx   cl.8-thing by K.
       'The house is put-on things by Keeya'

(13c) in-zu   yi-xol-uungwa-ho   emi-limo   neende   aBa-aatsa
       cl.9-house   cl.9-do-PSV,T/A-LOC sfx   cl.5-work by cl.2-man
       'The house is done-near the work by the men'

(14c) In-zu   yi-injil-uungwa-mwo   neende tsi-siimba
       cl.9-house   cl.9-enter-PSV, T/A-LOC sfx by cl.10-lion
       'The house is entered-in by the lions'

(15c) Omu-chela   ku-tsii-Buungwa-ho   neende aBa-xasi
       cl.3-river   cl.3-go-PSV, T/A-LOC sfx by cl.2-woman
       'The river is gone-near by the women'

(16c) Omu-saala   ku-pulush-il-uungwa-xwo   neende lii-ñoñi
       cl.3-tree   cl.3-fly-applied-PSV, T/A-LOC sfx   by cl.5-bird
       'The tree is flown-on(to) by the bird' .

Sentences similar to the above but without the LOC sfx are ungrammatical.
    Notice how this situation differs from English. If the noun ·
of the LOC NP is extracted from a prepositional phrase in English, then
in many cases the extracted noun can become the subject of a passivized
intransitive verb. Some examples of this adapted from Johnson are:
(24)   This bridge has never been flown under by the Red Baron.
(25)   The cast iron bed has been slept in by Louis XIV.
I do not have an explanation for these data, but it is interesting to
note that this extraction and passivization of the noun of an English
prepositional-locative is restricted to intransitive verbs. This is
reflected in the difficulty in comprehension an English speaker en-
counters on reading the glosses of the OluTsootso sentences (11c-13c).
In contrast, sentences (14c-16c) seem much more reasonable, closely
resembling Johnson's examples. Thus, OluTsootso allows the extraction
and passivization of nouns from LOC NP's for both transitive and in-
transitive verbs, whereas English allows this process only for intran-
sitive verbs. I have not been able to discover acceptable English
sentences like (11c-13c) when the verbs are transitive.
    Further observations on this process concern the status of the
extracted noun. Presumably, the extracted noun in English is a term
because it may be passivized. Since its underlying status was that of
a non-term locative-prepositional phrase, it seems likely that the de-
rivation of sentences like (24-25) involves the promotion of a noun
of a prepositional phrase to term-hood. This does not seem counter-
intuitive, because once the noun has been removed from the preposition,
it loses its morpho-syntactic signal of non-term status. Similar re-
sults obtain for the extraction of a noun from LOC NP's in OluTsootso.
After the noun has been removed from the LOC prefix, the noun no longer
carries a morpho-syntactic signal indicating its status as part of a
LOC NP (in this case, the Locative prefix). An intermediate step in

which extracted nouns are promoted is therefore indicated by this data
from both languages. In English, the promotion of the extracted noun is
from non-term status to term status, whereas in OluTsootso the LOC NP
is a term to begin with, and after the noun is extracted, the noun is
still a term.

To summarize the discussion of LOC PSV I, we have seen that, in
the first place, LOC NP's in OluTsootso must be analyzed as grammatical
terms, capable of bearing grammatical relations to verbs. LOC NP's can
function as derived and underlying subjects of verbs (there is no evidence
that sentences (3-5) are underlyingly any different from their surface
forms), as objects (when dislocated) and as quasi-objects (when pro-
nominalized). As grammatical terms, the LOC NP's may be passivized-in
which case the subject prefix and LOC-sfx agreeing with the LOC NP
must appear. When LOC NP's are passivized, the logical subject becomes
the object of the preposition neende, exactly like the passive examples
involving non-LOC NP's. LOC PSV I can apply to "transitive" and
"intransitive" verbs in OluTsootso, but there remain some mysterious
restrictions on which verbs allow this process to apply (cf. footnotes
8-10). The reason English has no analog of LOC PSV I is because LOC NP's
are typically prepositional phrases, which as non-terms are excluded
from becoming subjects by passive. Since in most cases prepositional
phrases are the only kind of NP which follow intransitive verbs in
English, the scarcity of passivized intransitive verbs follows from
the principles concerning the status of Locative noun phrases as non-terms
in English.

Both OluTsootso and English have a process in which nouns are ex-
tracted from locative NP's and passivized. This process is restricted
to intransitive verbs in English, but can apply for both transitive
and intransitive verbs in OluTsootso. It has been suggested that the ex-
traction of a noun from a LOC NP or locative-prepositional phrase has
the effect of promoting the noun to term-hood in English. The morphology
of the extracted noun in both languages would bear this out, since
there is no signal of the former status of the noun as either part
of a prepositional phrase (in English) or part of a LOC NP in OluTsoot-
so (since no LOC prefix precedes).

NOTES

[1]The vowel of the class prefix /iN/ is deleted here, and the
vowel of the locative prefix /mu/ is lengthened by a rule of pre-
nasal cluster lengthening. For further discussion, cf. Dalgish (under
preparation).

[2]Henceforth, "tense" is rendered by "T/A" (tense/aspect). The
morpheme/ng/ is the continuous marker, and the vowels that appear are
derived by a copying rule and by the application of pre-nasal cluster
lengthening. Again, cf. Dalgish (under preparation).

[3]This was discussed at a University of Illinois Linguistics Seminar
given by the author entitled "Some Problems in Passivizing Locatives",
and will be discussed in a forthcoming paper.

[4]Glide formation changes u to w and is usually accompanied by
compensatory lengthening. Vowel coalscence changes a sequence of /a-V/

to a two-vowel morae sequence of either $\underline{aa}$, $\underline{ee}$, or $\underline{oo}$. Both compensatory lengthening processes involved in these rules are overridden by a constraint against word-final $\underline{V_1V_1}$ sequences. Cf. Dalgish (1975) for further discussion.

[5]The passive suffix /u/ is copied and lengthened before /ng/, the continuous marker, while u becomes w by glide formation.

[6]These three verbs in OluTsootso are "double object" verbs, in that two NP's occur after the non-derived (i.e., non suffixed) form. The applied suffix is not used in unmarked usages of these verbs.

[7]This is probably the result or a modification of the so-called "directional" applied found in many Bantu languages, including to some extent, OluTsootso.

[8]The applied suffix here distinguishes /pulux/'fly (from)', from pulush-il 'fly (in the direction of)'.

[9]Strangely, /aful/'crawl', requires the applied suffix in the LOC PSV I form, whereas /mool/,'crawl', does not.

[10]I have not discovered why it is that /ul/, 'arrive' does not undergo LOC PSV I, while /tuux/, 'come to, arrive' does. And why should /tsi/, 'go' allow LOC PSV I, while /its/, 'come', does not? It is not the case that this distinction (in terms of allowing LOC PSV I to apply) is mirrored in differing syntactic behavior for other syntactic processes for these verbs. As far as I can determine, the processes of pronominalization, dislocation, extraction of the noun from LOC NP's (to be discussed below), relativization and question formation condition identical results for each of the intransitive verbs listed above. The intuitions of the native speaker are that certain verbs simply "don't allow the passive form" or "sound odd in the passive". It would seem then that restrictions on LOC PSV I are somewhat idiosyncratic, and are to be stated lexically for certain of these verbs.

[11]Other agreement phenomena governed by LOC NP's are verbal LOC suffixation, and adjectival agreement, and relativization marking. Interestingly, LOC NP's do not govern possessive agreement:
xu-tsi-siimba   tsi-a-nje 'on my lions', and not *xu-tsi-siimba xw-aa-nje.
LOC-cl.10-lion   cl.10-POSS-my   LOC-cl.10-lion LOC-POSS-my

[12]The Relative Markers (RM) consist of the pre-prefixal vowel of the noun class prefix, followed by some form of the class prefix, and then by /a/, which signals that the relativized NP is an object.

[13]See footnote (3).

[14]The gloss of this sentence in parentheses can be rendered in OluTsootso by means of substituting the benefactive applied suffix /il/ onto the verb in place of the preposition xulua, 'for'. When this occurs, the "beneficiary" object (in this case, omu-saatsa, 'man')can be passivized:

Omu-saatsa a-xup-il-uungwa aBa-ana neende esie

cl.1-man cl.1-beat-applied-PSV cl.2-child by I

'The man is beaten-the-children-for by me'

The logical relations continue to hold in this sentence, i.e., the children are beaten by me, and the man benefits from the activity. The glosses in English are not quite adequate without the circullocution given in the parentheses, but the construction is quite normal for OluTsootso and Bantu languages in general.

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THE BIVALENCE OF NEG RAISING PREDICATES

Richard Neil Halpern

Recently, Laurence R. Horn has attempted to characterize the class of predicates which participate in the phenomenon known as neg raising or neg transportation. In the light of his characterization, Horn has proposed an explanation of the ability of these predicates to trigger the raising of negs from lower S's or, if one prefers, to permit a rule of semantic interpretation associating a higher neg with the lower S. In this paper, I wish to critically examine Horn's approach. Although maintaining one of his essential insights, I shall argue for the rejection of the remainder of Horn's approach. Then, I shall propose and argue for a theory of my own.

I begin the discussion of Horn's theory by looking first at his characterization, second at his concomitant explanation. Now, he characterizers NR's, or neg raising predicates, in terms of strength scales[1] on which one can plot the relevant predicates. Corresponding to a so-called positive scale, a corresponding negative scale can also be constructed. For example, consider the epistemic predicates. At the extreme end of the positive scale one can plot "know" and "certain". At the midpoint of the positive scale Horn claims that one can plot "believe" and "likely". And at approximately the initial point of the positive scale, one can plot "possible". On the corresponding negative scale, one would merely plot the same predicates with a neg within their scope in the lower S. At the extreme end of the negative scale, corresponding to ultimate negativity, one can plot "certain not" and "know not". At the midpoint one can plot "likely not", according to Horn. And toward the extreme end of the negative scale, corresponding to degrees of weakest negativity, one can plot "possible not", again, under Horn's scheme of things.

Next, Horn observes that all of the NR's land at the midpoint of the positive scale, as he has plotted them. Hence, he has a characterization of the class of predicates triggering neg raising: neg raising predicates are positive midscalars.

Horn's explanation of the ability of these predicates to trigger neg raising falls directly from the above account. He claims that the following correspondence is "to be observed" (CLS 11, p. 288): "The negation of a midscalar value will be an intermediate value on the corresponding negative scale" (CLS 11, p. 288). Thus, for example, Horn is claiming that one can observe that "not believe" corresponds to "believe not" on the strength scales. Thus, Horn attempts to explain the phenomenon of neg raising by appealing to what he deems a matter of observation: the correspondence between the negated positive midscalar and the negative midscalar.

I find neither Horn's characterization nor his explanation theoretically adequate. First, as he himself notes, his scalar account is too strong. One can also plot such predicates as "claim" and "attempt" on positive strength scales, and by Horn's analysis both would fall on the respective midpoints. To better understand this point, one can think of "affirm" and "succeed" as occupying the extreme positive positions on the respective scales. To quote Horn's own view:

"The midscalar condition, while generally necessary to
qualify a predicate for NR-hood, is far from sufficient.
Verbs of effort like "try" and "attempt", while mid-
scalar, are universal non-neg-raisers, as are most verbs
of communication." (CLS 11, p. 290)

Second, his plotting of the predicates on the strength scales is
incorrectly done. For example, "likely" does not correspond to a
point at the center of the positive scale. Rather, "likely" applies at
all points more positive than the midpoint and at all points less posi-
tive on the positive scale with the exception of an infinitesimal
interval about its initial point. One can best understand this by
viewing the scales as measuring degrees of evidence or probabilities of
occurrence. Where the evidence is ultimate or the probability one, the
event in question is certain and people know that it will obtain.
Correspondingly, when the evidence is ultimately negative or the pro-
bability zero, the relevant event or state of affairs is deemed certain
not to obtain and people know that in fact it will not. In similar
fashion, when the balance of evidence is positive, however slight the
difference, or the probability just over one-half, one says that an
event or state of affairs is likely and people will believe in its
eventual realization. Horn makes the same mistake in his plotting of
"possible". "possible" applies at every point of the positive scale
and at every point of the negative scale with the exception of the
negative extremum at which the evidence points to negative certainty.
Surely, Horn's location at a point just to the "right" of the initial
Point of the positive scale is insufficient.

Thus, Horn's characterization is too strong in that it includes
predicates which do not raise negs. Again, NR's are not midscalar, as
Horn would have it. Rather, NR's occupy the interval consisting of the
entire positive scale down to an infinitesimally close distance from
the initial point of this scale. I should note that if one arranges the
positive and negative scales side-by-side, he finds himself with a model
of the real number line and can thus view this initial point of the
positive scale, which also happens to be the initial point of the nega-
tive scale, as the point of origin or zero point on the line.

Now, Horn's explanation of the phenomenon of neg raising is based
on what he believes to be the correspondence between -P and P-, where
"-" denotes simples negation and "P" denotes a midscalar predicate. For
the sake of argument, let us assume that midscalarity is a viable notion
and see how far Horn's proposal takes us. He claims specifically that
this correspondence can be established by simple observation. Yet, to
make such a move is to beg the entire question. For instance, one
cannot simply observe that "not believe" corresponds to "believe not".
A fortiori, there is nothing intrinsic to the structure of strength
scales which in the least way indicates that the negation of a predicate
falling at positive midscalar position corresponds to a predicate
falling at negative midscalar position. Horn has no ground for claiming
that he has observationally recorded a datum. Moreover, I suggest that
the matter which Horn considers observationally resolvable actually
comprises the crucial relationship to be explained. Upon closer inspec-
tion, then, one perceives that Horn has not merely offered a faulty

explanation. Rather, he has failed to offer one.

So, to summarize our current position, we find ourselves left with Horn's compelling insight that all NR's can be plotted on strength scales. In addition, we have found that these predicates occupy virtually the entire positive scale with the exception of an infinitesimal distance about the origin.

To sketch a different theory, we must ask what the logical possibilities are for any scalar predicate which takes sentential complements. There are four. First, the predicate can apply positively. This situation corresponds to virtually all points of the positive scale. For example, in the sentence "X believes that it is raining", "believe" is applying positively. Second, and corresponding to virtually the entire negative scale, the predicate can apply negatively. For instance, in the sentence "X believes that it is not raining", "believe" is applying negatively. Third, the predicate can apply neutrally in which case the relevant interval on the entire scalar model of the real line, consisting of the union of the positive and negative scales, is of infinitesimal length about the origin. In such a case, X has considered the claim and has evidence which divides itself in countervailing fashion so that he can draw neither a positive nor a negative conclusion. In effect, his state of belief is one of epistemic neutrality. Fourth, the predicate need not apply at all, for either of the following two reasons: first, X has not even considered the germane claim or has no evidential basis on which to judge it; second, X has withheld his response, thereby preventing himself from moving into the relevant mental state. In the case of "believe", this mental state would be a belief state, not surprizingly. I should emphasize that there is all the difference in the world between a state of neutral belief and the simple lack of a belief state. Mathematicians make the same distinction between the slope of a horizontal line, which is zero, and the slope of a vertical line, which is not defined in the theory and therefore does not exist.

Now, if I could show that for either semantic or pragmatic reasons, the hearer is able to eliminate these latter two possibilities of neutral belief and non-belief, then we would know that he is left with only the former two, positive belief and negative belief. Thus, I would be able to explain why "not believe" can be used to convey "believe not". For if the speaker employs a neg with wide scope in front of the higher predicate, "believe", then he has effectively ruled out the possibility of positive belief. That is, when I say "X does not believe S", I have ruled out the possibility that X is in a state of positive belief with respect to S. Thus, if the only two possibilities available to the hearer are positive and negative belief and if the possibility of positive belief has been ruled out, then the hearer must conclude that X is in a state of negative belief with respect to S.

The thrust of this approach, in general, then, is to show that NR's yield bivalent situations in which the only possibilities are positive and negative application of the predicate. Using the already developed notation, I am describing the following situation: $P(S)$ or $P(-S)$. Thus, by the law of the excluded middle, if $-P(S)$, which corresponds to the structure in which the neg has wide scope and belongs to the higher S, then $P(-S)$.[2] The key to this line of reasoning, naturally, is to

demonstrate that the hearer can in fact eliminate the possibilities of neutral belief and non-belief, thereby reducing the situation to a bivalent one.

The format of presentation will be as follows. First, I shall offer a classification of NR's. In the light of this arrangement, the arguments that some NR's result in bivalent situations will follow directly from the arguments that certain other NR's do. The second task will be to look at some representative NR's and see how they conform to the proposed theory. The examples to be examined are "believe", "want", "taste", and "intend". Third, I shall look at some of the more famous counter-examples to neg raising and try to explain their behavior in the light of the bivalent approach. These predicates are "know", "possible", and "hope".

Our classification is based on the distinction between predicates which describe psychological states, call them psychological predicates, and those which describe states of the world, call them metaphysical predicates. Among the psychological entries are "believe", "want", "taste", and "seem". The sub-class of metaphysical NR's includes "likely" and "desirable".[3] One also notes correlations between the psychological and metaphysical NR's. People believe certain claims because they deem them likely in the world. Again, people want certain states of affairs and events to obtain in the world because they consider them desirable. In effect, one can say that the metaphysical predicates name what is being measured or quantified on the strength scales: degrees of likelihood correspond to belief states and degrees of desirability correspond to "want" states or, in more familiar terms, states of desire. However, one should note an asymmetry here. While in general the same scale of likelihood corresponds to all individuals, scales of desirability will tend to vary with the individual.

The first predicate I examine is "believe". The goal is to show how the hearer is able to eliminate the possibilities of non-belief and neutral belief. I begin with the former case.

Presumable, non-belief can result either because X has failed to even consider the claim (or perhaps has no relevant evidence to make a judgment) or because X has consciously refrained from making a judgment. The first of these possibilities is eliminated by simple conversational implicatures. My telling you that X does not believe S is only of interest if X has in fact considered the claim and had in his possession some pertinent evidence. Consider how strange it would be for me to explain to you that the reason that X does not believe S is that he never bothers to consider such matters. Regarding the possession of germane evidence, consider the bizarreness of my telling you that X does not believe that the number of galaxies in the universe is 10^{11}, where X is not an astronomer. Surely, it would be odd to deny that one holds a belief concerning which he has neither confirming nor disconfirming data.

The matter of refraining from judgment forces us to focus on a critical property of psychological NR's. Because these predicates denote attitudes, one cannot decide to move into a particular state with respect to them.[4] Psychologically, the formation of an attitude involves a response to the world, perhaps in the form of a set of data, and the development of a corresponding mental state. Thus, one hears the

evidence for a claim, psychologically responds to the apparent balance, and moves into a commensurate state of belief with respect to the claim.[5]

The discussion thus far has been semantic, centering on the meaning of an attitudinal predicate. Yet, one can also adduce syntactic evidence to the effect that predicates of attitude denote mental processes beyond the control of the subject. First, one cannot use them to form imperatives:

1*Believe that it is raining.

2*Want it to rain.

3*Intend to be nice.

Since in general predicates can be constructed for predicates within the subject's control, on the basis of 1, 2, and 3 one must conclude that attitudinal predicates do not fall within this domain. The verb "decide" can be used as another syntactic diagnostic to test whether attitudinal predicates denote processes within the subject's control:

4*X decided to believe that it is raining.

5*X decided to want it to rain.

6*X decided to intend to be nice.

The results are once again corroborating. Hence, we have shown why the hearer can eliminate the possibility of non-belief. For pragmatic reasons which manage to induce conversational implicatures, he can rule out the possibilities of non-consideration and non-possession of evidence. Again, for reasons stemming from the semantics of attitudinal predicates in general, "believe" in particular, he can eliminate the possibility of the subject's refraining from judgment altogether.

We must now confront the possibility of neutral belief. Here, too, the principles of conversational implicature are germane. As pointed out above, scalar predicates tend to apply either positively or negatively, depending on whether the greater quantity of evidence points in either a positive or negative direction, however slight the difference. When the balance of the evidence is positive, people tend to believe the corresponding claim. When the balance of evidence is negative, people tend to disbelieve the corresponding claim. Now, the probability that these two degrees of evidence would counter-balance one another is extremely small. To model this situation, consider two dice, one labelled positive, the other negative. The case in which the quantities of evidence are counter-vailing corresponds to a roll on which the facets of the dice turn up the same. The probility of such an occurrence is one-sixth, and as the facets on the dice increase in number, corresponding to increased quantities of data, the probability of this neutralizing event vanishes to zero.

Thus, there is a statistical implication that when one is in a non-positive belief state with respect to a claim that he must in fact be in a negative belief state with respect to the claim. In the light of this statistical implication, the speaker has access to a conversational implicature by means of which he can convey negative belief by simply denying positive belief. Note that the speaker also has the option of cancelling this implicature and the employment of such a strategy is not uncommon. For example, consider the following statement: "I don't believe that it's raining and I don't believe that it isn't".

The fact that the conveyance of negative belief by means of the denial of positive belief involves the application of a conversational implicature can explain Dwight Bolinger's observation that the structure with higher neg is weaker in force than the one with the neg embedded in the lower S. In the former case, one must get to the thrust of the assertion by an indirect route, while in the latter case the body of the claim is presented directly. Thus, this explanation of the statistical improbability of the neutral state of belief is powerful enough to account for an intuitively appealing though otherwise enigmatic observation.

"want" behaves in a fashion exactly analogous to "believe" and thus requires no additional argumentation. By conversational implicature, one knows that the subject must have considered the S within some evidential context. By dint of its attitudinal semantic structure, "want" denotes a psychological state which one cannot consciously prevent himself from entering. Finally, the argument concerning the minimal probability of arriving at a neutral state applies to "want" just as it did to "believe". The only difference is that one is measuring degrees of desirability rather than degrees of likelihood. Still, the mathematics of probability applies in identical fashion and the conversational implicature thereby permitted is of the same kind.

"taste" can be handled straightforwardly. For semantically it is a belief predicate. When one says that the meat tastes salted to him, he is merely saying that he believes by means of his sense of taste that the meat is salted. Hence, "taste" has the meaning of "believe" with additional information indicating by what means the evidence for the belief state was obtained. Therefore, the same analysis applied to "believe" accounts for the neg raising ability of "taste". Yet, "taste" is curious in that it admits of an analysis even simpler than the one applied to "believe". For "taste" allows no neutral state. The presence of any quantity of evidence confirming the claim that the meat is salted, however slight, is sufficient to justify positive belief with respect to this claim. As soon as one detects salt on his palate, he can and must move into a positive belief state. On the other hand, the mere absence of such positive evidence is sufficient to justify the claim that the meat is not salted. If one does not detect salt on his palate, he has no choice but to deny the claim that the meat is salted, if one assumes that he has access to no outside evidence. Thus, there is no point on a strength scale corresponding to a state of neutral belief with respect to one's capacity to detect by means of his taste buds.

Unlike the previous two cases, "intend" demands an individual analysis. With respect to non-belief, it behaves just as do "believe", "want", and "taste". When one says that X intends to perform actionY, a hearer can validly infer that X has considered the relevant action in some evidential framework by resort to the same conversational implicatures previously invoked. As sentences 3 and 6 above demonstrate as well as direct semantic analysis, "intend" denotes a mental state of attitude the color of which cannot be consciously controlled. Hence, the hearer can eliminate the possibility of non-intention.

The question of neutral intention is slightly more difficult: on what kind of evidential scale does one plot "intend"? Clearly, the meaning of this predicate involves some notion of wanting or desire.

A necessary condition that one intend to perform some action is that he wants to or wishes to perform it. In fact, one's intentions can be viewed as a sub-class of his wants. Of all the events and states of affairs that one wishes would obtain in the world, some portion of which he takes it upon himself to attempt to effect. However, as just implied, one does not intend to carry out all of his desires. The missing variable here concerns one's beliefs as to the feasibility and potential success of the relevant ventures. Thus, intentions are a function both of one's desires and of one's beliefs as to the likelihood of successfully completing the germane actions. To map these two variables of desire and belief onto a new scale, we can invoke the notion of motivation and measure this concept on a scale of its own.

In effect, then, I am arguing that "intend" corresponds to a strength scale measuring degrees of motivation. As before, one can argue that only an infinitesimal interval about the origin leads to a state of neutral intention. Thus, by the same statistico-probabilistic analysis previously applied, one can show how the hearer eliminates the possibility of neutral intention by interpreting a conversational implicature. And since both non-intention and neutral intention are eliminated as possible states, a bivalent situation with only positive and negative choices results.

As should be clear, such metaphysical NR's as "likely" and "desirable" yield only three possibilities: positive, negative, and neutral application. For instance, it is either desirable that it be raining, or desirable that it not be raining, or unpreferred whether it be raining or not. This last case corresponds to the state of neutral desirability. Thus, our by-this-time familiar probabilistically motivated conversational implicature applies to yield a bivalent situation, and the class of metaphysical NR's is taken care of.

So, let us summarize the situation to date. We have demonstrated how each of the major classes of NR's yields bivalent situations in normal conversational usage. The cases of non-application and neutral application can be eliminated thereby leaving only those with positive and negative thrusts. Thus, when a speaker uses a neg with wide scope, he eliminates the positive possibility and enables the hearer to conclude that a negative application is intended: $P(S)$ or $P(-S)$ and thus $-P(S)$ implies $P(-S)$.

I begin the discussion of counter-examples with "know". There appear to be a number of reasons why this predicate fails to trigger the relevant grammatical process, but one relates directly to its domain of application on the strength scale.[6] While "believe" applies everywhere with the exception of an infinitesimal interval about the origin, "know" applies only at infinitesimal intervals terminating at the two extrema. In the realm of common sense, one only possesses knowledge when he has an abundance of evidence confirming the relevant claim. Similarly, one only possesses negative knowledge when he possesses an abundance of evidence disconfirming the relevant claim. Thus, when a speaker asserts that one is not in a state of positive knowledge with respect to a given claim, there is no probabilistic reason for the hearer to conclude that the subject is in a state of negative knowledge with respect to the germane claim. On the contrary, the probability would indicate that the

subject is in a state of epistemic neutrality, as the interval corresponding to the neutral state exhausts virtually the entire strength scale. Thus, in the case of "know" the neutral case is available, even preferable to the hearer, and bivalence fails to result.

"possible" presents a curious case. In the first place, this predicate satisfies Horn's scalarity criterion. In the second place and in a strictly logical sense, "not possible" entails "possible not". For it is patent that if it is not possible that it is raining, then it is possible that it is not raining. Similarly, if it is certain that it is raining, then it is possible that it is raining. Moreover, if "not possible" entails "possible not", then it also performs the weaker task of conveying, in the pragmatic sense, the relevant notion. Hence, "possible" would appear to possess the traits required to trigger neg raising. More troubling still, by our analysis "possible" yields a bivalent situation. "possible" occupies the entire positive scale and "possible not" occupies the entire negative scale. One feels the urge to thunder "Why".

One begins to sketch an explanation by noting that in general "not possible" is not conversationally used to convey "possible not". That is, in spite of the entailment relation, speakers do not rely on the former notion to convey the meaning of the latter. If we can understand why this relationship is not utilized in general, we can then understand why speakers have not applied it to these particular structures which provide evidence for a grammatical rule of neg raising. Note here that however prejudicial the name of the mechanism, it remains unclear whether it has a syntactic or semantic basis, even whether the question is empirically decidable.

Now, a deeper look at the scalarity of "possible" reveals an immediate solution to the conundrum. Although the positive and negative forms of this predicate fill up their respective portions of the strength scale, they also do much more. "possible" applies everywhere but at the infinitesimal interval of negative certainty and "possible not" applies inversely analogous fashion. In effect, the scalar domains of these two expressions intersect at all points with the exception of the two extrema. Thus, when a speaker negates "possible", he also negates virtually the entire domain of "possible not". In fact, all that he leaves is the point of negative certainty.

Compare this situation with the case of "believe". When a speaker negates "believe", he leaves both the domain of "believe not" intact and in its entirety along with the infinitesimal neutral zone about the origin. After the application of a conversational implicature which eliminates this neutral territory from consideration, the hearer is left only and entirely with the domain of "believe not", the predicate whose meaning the speaker was trying to convey. However, when a speaker employs the locution "not possible", he does not leave the entire domain of the predicate whose meaning he wishes to convey. Rather, he compells the hearer to draw a conclusion which he may very well not intend to communicate. To get perspective on this, consider a speaker conveying that X is a mammal by claiming X is a giraffe. Or imagine him informing someone that a number is positive by telling that it is two. Clearly, it will only be in highly special cases that the speaker resorts to this

type of <u>modus operandi</u>. In general and for obvious reasons, I think it safe to say that it is not a preferred mode of communication.

Hence, to avoid such blatant misinformation, speakers do not employ "not possible" to convey the meaning of "possible not". The pragmatic justification for this decision is powerful.

"hope" poses another interesting problem. Doubtless, when one says that X does not hope that S, he implies by way of conversational implicature that X has indeed considered S against some evidential background. Again, "hope" clearly denotes an attitude. The question, then, is whether one need move into a corresponding mental or attitudinal state.

For contrast, consider the case of "believe". Now, because one's beliefs are not within his conscious control, when confronted with an evidentially supplied claim, he must move into a corresponding mental state: positive, negative, or neutral belief. But note that "believe" denotes a simplicial psychological notion. Only one's epistemic stance is involved. "hope", however, denotes a complex psychological state. First and transparently, it involves the notion of desire. One only hopes for those things whose realization he wants or desires. Yet, one must also believe that the germane event or state of affairs is possible or at least reasonably possible. Consider the following data:

7 X doesn't hope to win every game this season.

8 X wants what he knows he cannot have.

9*X hopes for what he knows he cannot have.

Now, under one reading of 7, the speaker is claiming that X does not believe that it is feasible or possible to win every game this season. In effect, he is negating the epistemic sub-component of the meaning of "hope". Again, the grammaticality of 8 shows that it is not logically contradictory to want what one knows he cannot have. On the other hand, the ungrammaticality of 9 shows that it is semantically anomalous, more, logically contradictory, to hope for what one knows he can not have. And this is because part of what it means to hope for something is to believe it possible.

Thus, although one must move into some corresponding state of desire with respect to an S, it is only a contingent matter that one possesses the belief necessary to move into a state of hope with respect to it. One can psychologically fail to hope for an event or state of affairs simply because he does not deem it possible. Hence, although a state of non-hope cannot be consciously chosen, one may perforce move into it by failing to possess the requisite epistemic attitude. The upshot is that since the state of non-hope is still a logical possibility, bivalence is not achieved.

One virtue of this explanation is that it can be applied to another attitudinal non-neg raiser, "fear", <u>mutatis mutandis</u>. Here, the same kind of semantic complexity is involved. To fear an event or state of affairs, one must both desire that it not obtain and believe that it is possible. For example, one can fail to fear that it will rain either because one desires that it rain or because one deems the possibility exceedingly slim or perhaps non-existent. [7]

It is high time to sum matters up. First, I have attempted to show that Horn's recent attempt to characterize NR's and to explain their ability to trigger the relevant grammatical process is inadequate. His

characterization is both too strong and mistakenly formulated. It
wrongly predicts that such predicates as "claim" and "attempt" should
neg raise. Again, his notion of mid-scalarity is mistaken. NR's
occupy virtually the entire positive portion of the strength scale,
not merely the midpoint; in addition, predicates such as "possible"
and "certain" occupy intervals rather than points. Thus, as Horn's
explanation is based on his plotting of the predicates, it is midguided
at the outset. Yet, one can make the stronger claim that Horn's pro-
posed explanation is in fact vacuous. He avers that one can simply look
at the strength scale and observe that the negation of a positive mid-
scalar corresponds to a negative mid-scalar. As I have pointed out,
there is nothing intrinsic to the structure of such scales which would
indicate that this correspondence should hold, even were one to in-
correctly assume that the germane predicates are positive mid-scalars.
Moreover, this supposed datum of correspondence concerns the very
matter in need of explanation: why speakers can convey P(-S) by means
of -P(S).

Second, utilizing Horn's powerful insight that NR's can be plotted
on strength scales, I have offered my own characterization of this class
of predicates: briefly, NR's are scalar predicates which yield bivalent
situations consisting of positive and negative states. To demonstrate
this, I showed how the hearer can eliminate the possibilities of non-
application and neutral application. Crucial factors in this demon-
stration were the attitudinality of certain of the predicates and, in
general, the low probability of arriving at the neutral state of appli-
cation. Then, in the light of this characterization, I have shown how
the speaker is able to use the negation of a positive mid-scalar to
convey the meaning of the accompanying negative mid-scalar. In
schematic form this argument reduces to a trivial application of the
law of the excluded middle: P(S) or P(-S); hence, -P(S) implies P(-S).

Still, at least one point of curiosity remains: why do only scalar
bivalent predicates trigger neg raising? What of "true", a veritable
paragon of bivalence? Thus far in this paper I have attempted to
justify the speaker's technique of conveying "believe not" by means of
"not believe", to point out the semantic and pragmatic factors which
make this operation legitimate. Nowhere have I questioned why he
might wish to employ this indirect route. Perhaps an understanding of
the motivation for this process will provide insights into the para-
metric limitations on its class of triggers. I suggest that we move
from a study of the structure of this grammatical mechanism to an exam-
ination of its purpose.

Now, as Bolinger pointed out, the effect of neg raising is to
weaken the semantic thrust of the claim. It would be natural to con-
jecture that the achievement of this semantic weakening is also the
purpose of the mechanism. Then, if one could find the specific pro-
perty of scalar predicates which allows or perhaps induces this weak-
ening and proceed to show that such non-neg raisers as "true" lack this
property, then he would at least have the germ of an explanation.

As pointed out above, the key element in this semantic weakening is
the existence of a neutral state of application. The speaker must rely
on a conversational implicature to eliminate this possibility and to

take the hearer from the simple denial of the positive state to the
negative state itself. Now, scalar predicates have a neutral zone
naturally: points on the scale at which the quantity is not strong
enough to induce either a positive or negative state. It is an open
question whether there are predicates corresponding to discrete
states which only admit of positive, negative, and neutral application.
Yet, if there are sentential predicates in this putative class, the
theory proposed here would predict that they neg raise. Perhaps a
concrete example will make clear what is at stake here. Say that all
of Tom, Dick, and Harry wish to marry Betty. If one knows and knows
that his hearer knows that only the former two were actually in the
running, then he can convey the fact that Betty married Tom by denying
that she married Dick. In this case, the speaker has taken the
indirect route to soften or weaken the news, and the crucial element
in this process is the neutral zone consisting of Harry, the forgotten
man. Note that if only Tom and Dick had been candidates, then denying
that Dick married Betty would be just as strong as asserting that Tom
did. Again, the key factor is the neutral zone. Hence, since "true"
only corresponds to the two discrete states of truth and negative
truth,[8] otherwise known as falsity, the speaker does not weaken the
thrust of his claim by saying that it is not true that it is raining
rather than it is true that it is not raining. Thus, if the purpose
of neg raising is to weaken the force of the claim, it is no accident
that "true" is not a neg raiser.

In general, then, I am also arguing that it is no accident that
only scalar predicates trigger neg raising. The matter of discrete
predicates applying neutrally aside, it is clear why predicates which
do not allow such neutral application fail to trigger this grammatical
mechanism. Of course, I am assuming the correctness of the conjecture
that semantic weakening is indeed the function of neg raising. Cer-
tainly this question is an open one. Moreover, if this designated
function was only operative in the historical origins of the process,
attempts at empirical verification will be beside the point. Still,
it is not beyond the realm of possibility to psycholinguistically
determine whether this putative function plays a synchronic role: a
positive finding in this light would provide perhaps the only confirm-
atory evidence for the conjecture. In any case, the matter may be
worthy of investigation. Moreover, if speakers do employ neg raising
to weaken the thrust of their claims, one wonders what motivates them
to engage in such subtlety. Doubt? Simple politeness? The desire
to puzzle linguists?

Footnotes:

    1. Following Horn, I say that a predicate is scalar if and only
if it can be plotted on a strength scale. Thus, it is a purely contin-
gent matter whether other predicates can be plotted on this scale.
Again, it is purely contingent whether a particular predicate will

admit of degrees on the scale: i.e., map to some interval on the scale.

2. In his paper of 1975, Horn points out that Renate Bartsch has recently advanced a theory of neg raising with a bivalent orientation. However, Horn indicates that Bartsch's approach is both too strong and too weak: it predicates that "know" is an NR and fails to predict that "likely" is an NR. Moreover, Bartsch's theory is powerful enough to predict the neg raising ability of all sentential predicates. To handle "believe", she assumes that the subject has come to some epistemic conclusion, one way or the other. But this treatment is perfectly analogous to assuming that with respect to "claim" the subject has claimed one way or the other. Thus, for Bartsch, "claim" is as likely to yield bivalence as "believe". In principle, then, Bartsch's theory demands a reductio.

3. Another semantic sub-class of NR's is comprised by "normal", "tend", and "accustomed". To at least demonstrate their ability to accept symmetric negative placement, I offer the following examples: "It is not normal to atrophy" can convey "It is normal not to atrophy". "X does not tend to lie" can convey "X tends not to lie". "X is not accustomed to win" can convey "X is accustomed not to win". These cases can be handled with the same probabilistic treatment of the neutral state employed above.

4. Since "claim" and "attempt" denote actions rather than attitudes, the subject is able to consciously refrain from indulging in the corresponding activities or processes. Thus, the hearer cannot eliminate the possibility of non-application and bivalence fails to result. In the same vein, one can explain the neg raising ability of "would say" as follows. Those things which one would say, were he called upon to speak, are the things which he currently believes. Thus, when one says that he would say S, he is actually saying that he believes S. Obviously, this move is a conversational ploy, and it is unclear whether one should include it in the semantic or the pragmatic component of the grammar. Again, the neg raising ability of "advise" can be explained by pointing to the apparent semantic complexity of this predicate. Crudely and no doubt tentatively, I would analyze "advise" as "say desirable". Thus, "X advised Y to leave" can be analyzed as "X said to Y that it is desirable that Y leave". Evidence for this position comes from the familiar if shakey argument with "almost". "X almost advised Y to leave" can mean either that X almost made the relevant remarks or that X said that it was almost desirable that Y leave. And if this turns out to be a matter best treated in the pragmatic rather than the semantic component of the grammar, so much the more interesting for neg raising: one can argue that it, too, is sensitive to the pragmatic component.

5. There are other non-sentential, attitudinal predicates corresponding to strength scales. Clearly, "like", "respect", and "trust" can take simple NP objects. Observe that by the probabilistic argument invoked above, one can show that these predicates yield bivalent situations. Thus, it is somewhat reassuring that they behave as the theory proposed in this paper would predict: "not like" conveys "dislike"; "not respect" conveys "disrespect"; and "not trust" conveys "distrust".

6. Jerry L. Morgan has pointed out to me another possible reason why "know" fails to neg raise. He argues that "X does not know S" not only fails to imply that X has considered S, but, on the contrary, conversationally implicates that X has not even considered S. This implicature would guarantee the viability of the state of non-application and bivalence would not result. As evidence for this view, Morgan points to the oddness of the following sentence: X thinks that I'm in Chicago, and he doesn't know that I'm not. Morgan's point appears cogent to me, and I believe that it requires further investigation. And if this implicature holds, one has every reason to wonder why. Another factor possibly inhibiting the neg raising ability of "know" concerns the matter of logical presupposition. At first glance, the following two sentences appear to have different logical presuppositions: X knows that it is not raining.

X does not know that it is raining.

Thus, a grammatical rule associating a higher neg with a lower S or raising a lower neg to a higher S runs the risk of obfuscating the intended communication. Even if the logical presupposition is determined at the level of semantic representation, one's interpretation of the data provided at the level of surface structure could easily mislead him.

7. Of perhaps some surprise, the German "hoffen" does not contradict this analysis. According to German speakers, negating "hoffen" merely denies that one possesses the relevant desire. That is, the German speaker cannot use a higher neg to deny the epistemic component of "hoffen". I should point out that in English, if it is generally assumed that an event or state of affairs is possible, then a speaker can use "not hope" to convey the meaning of "hope not". For example, a diehard Cub fan could convey a negative hope by saying "I don't hope we finish last". Whether he actually would is another question altogether.

8. Paul Neubauer has pointed out to me that truth does admit of a third state: namely, non-application, as in "The king of France is bald". However, this trivalent situation is only known to hold for the theorist's conception of truth. Whether English speakers employ "true" accordingly is another matter entirely. That is, although as a metalinguistic entity "true" behaves trivalently, in the light of current views on presupposition, English speakers may not have conformed. Moreover, as the development of neg raising was presumably a diachronic process of somewhat remote vintage, and since the received views on truth are as modern as the work of P. F. Strawson, it is highly doubtful that this grammatical process was affected by innovations in philosophical theory. Still, the question is an open one and psycholinguistic inquiries might yet establish that speakers do, on occasion, use "not true" to convey a failure of truth value. Of course, investigators must look beyond the walls of semantics classes.

References:
Horn, L. [1975] "Neg-Raising Predicates: Toward an explanation," in CLS 11.

Relational Grammar, Ergativity, and Hindi-Urdu

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1.0 The aim of this paper is to investigate the phenomenon of Ergativity
in Hindi-Urdu in the framework of Relational Grammar (Postal and Perl-
mutter 1974, Johnson 1974) and to discuss the theoretical implications
of our findings.[1] It has been claimed that 'grammatical relations play
a central role in the syntax of natural languages and hence should be ac-
corded a more central role in linguistic theory' (Johnson 1974). The argu-
ments in favor of a relationally-based grammar are as follows. The ultimate
goal of linguistics is to precisely characterize the notion of a possible
human language. A more immediate goal of linguistics is to establish
strong formal and substantive constraints on the notion of a possible
grammar. One hypothesis that restricts the notion of a possible grammar
is that there is a finite, universal set of transformational rules from
which all languages select some subset. Hence, a number of transformational
rules should be formulated directly in terms of grammatical relations in
order to formally represent the universal character of these rules. But
it is not possible to characterize grammatical relations in terms of sub-
configurations of phrase-markers in a language-independent fashion, as
suggested in Chomsky (1965). Any attempt to do so forces one to make a
number of unwarranted assumptions about the nature of underlying structure.
Also, grammatical relations are important at non-deep-structure levels,
too. In developing a theory that incorporates grammatical relations as
primitives, crucial use is made of the notion of Accessibility Hierarchy
(Keenan and Comrie 1972).[2] It is in this regard that the phenomenon of
Ergativity is discussed in relationally-based grammatical literature (e.g.
Johnson 1974). The Keenan-Comrie Accessibility Hierarchy is proven to
be inapplicable to the Ergative languages and a Generalized Accessibility
Hierarchy that incorporates the Ergative Hierarchy is proposed in Johnson
(1974).

In this study we focus on two issues. First, we discuss the character-
istics of Ergative languages and determine if Hindi-Urdu is to be classi-
fied as an Ergative language, and if so, to what degree. Second, in light
of the evidence from Hindi-Urdu, we examine the criterion suggested for
determining the primacy of a grammatical relation. It has been taken for
granted in the existing literature that the primacy of a grammatical re-
lation is to be determined on the basis of the syntactic behavior of
arguments that bear the particular grammatical relation. For example,
subject NP's behave differently with regard to grammatical transformations,
i.e. they control more syntactic processes, as compared with object NP's
in languages such as English. Hence, the subject-relation is primary in
these languages. The evidence from Hindi-Urdu raises some questions about
this assumption and suggests that the primacy or non-primacy of a grammatical
relation cannot be determined solely by the syntactic behavior of the
arguments bearing the particular grammatical relation.

2.0 Given intransitive and transitive sentences, there are basically two
types of languages: Nominative-Accusative, in which the subject of the
intransitive construction is functionally identified in some sense with
the subject of the transitive construction; and Absolutive-Ergative, in

which the subject of the intransitive construction is functionally identified with the object of the transitive construction.[3] In other words, in the former type of language, some rules of the language treat the subjects of the intransitive and transitive constructions alike, whereas in the latter, they treat the subject of the intransitive and the object of the transitive constructions alike. A language may be called superficially Ergative if such functional identification is confined to case-markings. In constrast, if the functional identification is in terms of some transformational rules, the language under consideration is Ergative in a 'deeper' sense. For instance, Johnson (1974) proposes the following classification of languages on an Accusative/Eragative scale:

1	2	3
All rules sensitive to Abs./Erg. 100% Ergative	Some rules sensitive to Abs./Erg.; some to Nom./Acc.	No rules sensitive to Abs./Erg. 100% Accusative
Dyirbal	South Greenlandic Eskimo	English

3.0 In Johnson (1974) there is an implicit assumption that a language is Ergative to some degree even if it has only a few rules which reflect the functional identification of the direct object of the transitive construction (henceforth, DO) and the subject of the intransitive construction (henceforth, SI), i.e. the primacy of the Absolutive. Although there are some rules in Hindi-Urdu which appear to reflect ergative properties, there is adequate evidence to show that these properties are the consequence of other independent semantic and syntactic facts of the language and hence, are not to be taken as evidence for the primacy of the Absolutive relation. The discussion proceeds as follows: Section 3.1 gives the rules that seem to reflect Ergativity in Hindi-Urdu. Section 3.2 presents some semantic and syntactic facts which motivate alternative explanations of the phenomena discussed in 3.1. In section 3.3 we evaluate the arguments for and against deep Ergativity in Hindi-Urdu in light of the discussion of Dyirbal (Dixon 1972). In section 3.4 we present the generalizations that emerge from the facts discussed in 3.1 - 3.3. In 3.5 certain relevant syntactic processes are discussed to further strengthen our conclusion. The final section states the theoretical implications of our study.

3.1 In this section we discuss verbal agreement, past participial modifiers, and quantifier floating in Hindi-Urdu as relevant to our discussion on Ergativity.

3.1.1 In Hindi-Urdu, the Absolutive seems to control verbal agreement. Verbs take endings for aspect and tense and agree in number, gender, and person with some NP in the sentence.[4] In the perfective, the transitive verb in Hindi-Urdu agrees with the DO, provided the DO is not followed by the postposition ko, while the intransitive verb agrees with the SI in number, gender, and person. The following examples illustrate this.

    1. lərkõ   ne   rat   bhər   kam   kiya
        boys   ag.   night   all   work   did
        (masc. pl.) (fem. sg.)   (masc. sg.) (masc. sg.)
        The boys did the work all night.

2. ləṛke   ne   subəh   citthiyā   likhī
   boy   ag.   morning   letters   wrote
   (masc. sg.)   (fem. sg.)   (fem. pl.)   (fem. pl.)
   The boy wrote the letters in the morning.

3. ləṛkī   ne   subəh   dərvaze   khole
   girl   ag.   morning   doors   opened
   (fem. sg.)   (fem. sg.) (masc. pl.) (masc. pl.)
   The girl opened the doors in the morning.

4. ləṛke   ne   ye   pətr   rat   likhe   the
   boy   ag.   these letters night   written   had
   (masc. sg.)   (masc. pl.) (fem. sg.)   (masc. pl.)
   The boy wrote these letters (last) night.

5. ləṛka   kursī   pər   bɛṭha
   boy   chair   on   sat
   (masc. sg.) (fem. sg.)   (masc. sg.)
   The boy sat on the chair.

6. ləṛke   rat   aye
   boys   night   came
   (masc. pl.)(fem. sg.) (masc. pl.)
   The boys came (last) night.

7. ləṛkiyā   subəh   pəhũcī
   girls   morning   reached
   (fem. pl.)   (fem. pl.)
   The girls reached in the morning.

Sentences 1-7 show that the Absolutives (DO and SI) are higher in the hierarchy as compared to the Ergative, or the subject of the transitive sentence (henceforth, ST), as the Absolutives control the verb-agreement.

3.1.2 Another rule which seems to be sensitive to the Absolutive/Ergative distinction is the rule that yields past participial modifiers (Kachru 1965, 1966, Verma 1971).[5] This rule operates on a clause and results in a past participial modifier that modifies a head noun coreferential with the DO or SI of the participial, but not a head noun coreferential with the ST. This process is exemplified in 8 and 9 below.

8. [ləṛkõ   ne   kam   kiya]   kam
   boys   ag.   work   did   work

9. ləṛkõ   ka   kiya   hua   kam
   boys   of   done   ptcpl. work
   The work done by the boys

The rule blocks the generation of 11 from 10:

10. [ləṛkõ   ne   kam   kiya]   ləṛke
    boys   ag.   work   did   boys

11. *kam   kiye   hue   ləṛke
     work   done   ptcpl.   boys
     *The work-done boys

The rule operates on 12 to yield 13:

12. [ləṛke   soe]   ləṛke
     boys   slept   boys

13. soe   hue   ləṛke
     slept   ptcpl.   boys
     *The slept boys

Some more examples are in 14 and 15.

14. [ləṛke   ne   kəhanī   pəṛhī]   kəhanī
     boy   ag.   story   read   story

14a. ləṛke   kī   pəṛhī   huī   kəhanī
     boy   of   read   ptcpl.   story
     The story read by the boy

15. [ləṛke   ne   kəhanī   pəṛhī]   ləṛka
     boy   ag.   story   read   boy

15a. *kəhanī   pəṛha   hua   ləṛka
     stcry   read   ptcpl.   boy
     *The story-read boy

3.1.3 The Quantifier floating rule in Hindi-Urdu seems to be sensitive to the Absolutive/Ergative distinction. A quantifier floats over the DO or SI, but not over ST:

16. $\left\{\begin{array}{l}\text{səb}\\\text{bəhut}\\\text{kuch}\end{array}\right\}$ ləṛkõ   ne   kam   kiya

     $\left\{\begin{array}{l}\text{all}\\\text{many}\\\text{some}\end{array}\right\}$ boys   ag.   work   did

     $\left\{\begin{array}{l}\text{All}\\\text{Many}\\\text{Some}\end{array}\right\}$ boys   did   the   work.

17. *ləṛkõ   ne $\left\{\begin{array}{l}\text{səb}\\\text{bəhut}\\\text{kuch}\end{array}\right\}$ kam   kiya[5]

     boys   ag. $\left\{\begin{array}{l}\text{all}\\\text{much}\\\text{some}\end{array}\right\}$ work   did

     The boys $\left\{\begin{array}{l}\text{all}\\\text{*much}\\\text{*some}\end{array}\right\}$ did   the   work.

18. lərkõ   ne $\begin{Bmatrix} \text{səb} \\ \text{bəhut} \\ \text{kuch} \end{Bmatrix}$ kam   kiya

    boys   ag. $\begin{Bmatrix} \text{all} \\ \text{much} \\ \text{some} \end{Bmatrix}$ work   did

    The boys did $\begin{Bmatrix} \text{all the} \\ \text{*much} \\ \text{some} \end{Bmatrix}$ work.

19. lərkõ   ne   kam $\begin{Bmatrix} \text{səb} \\ \text{bəhut} \\ \text{?kuch} \end{Bmatrix}$ kiya

    boys   ag.   work $\begin{Bmatrix} \text{all} \\ \text{much} \\ \text{some} \end{Bmatrix}$ did

    *The boys did the work $\begin{Bmatrix} \text{all} \\ \text{much} \\ \text{some} \end{Bmatrix}$.

20. $\begin{Bmatrix} \text{səb} \\ \text{bəhut} \\ \text{kuch} \end{Bmatrix}$ lərke   ae

    $\begin{Bmatrix} \text{All} \\ \text{Many} \\ \text{Some} \end{Bmatrix}$ boys   came.

21. lərke $\begin{Bmatrix} \text{səb} \\ \text{bəhut} \\ \text{kuch} \end{Bmatrix}$ ae

    The boys $\begin{Bmatrix} \text{all} \\ \text{*many} \\ \text{*some} \end{Bmatrix}$ came.

3.2.1   Ergativity in Hindi-Urdu is limited to the perfective aspect. Verb agreement and participialization are controlled by SI and ST in other aspects and non-aspectual tenses. Consider the following examples in the imperfective.

22. lərkī   dīn   bhər   khana   pəkatī   hε
    girl   day   all   meal   cooks   aux.
    (fem. sg.)   (masc. sg.)   (masc. sg.)   (fem. sg.)
    The girl cooks all day.

23. lərka   rat   bhər   citthiyã   likhta   hε
    boy   night   all   letters   writes   aux.
    (masc. sg.)   (fem. sg.)   (fem. pl.)   (masc. sg.)
    The boy writes letters all night.

24. bəcca   rat   bhər   rota   hε
    child   night   all   cries   aux.
    (masc. sg.) (fem. sg.)   (masc. sg.)
    The child cries all night.

25. lərkī   din   bhər   sotī   hε
    girl   day   all   sleeps   aux.
    (fem. sg.) (masc. sg.)   (fem. sg.)
    The girl sleeps all day (long).

Even more significant is the fact that the ergative pattern of agreement obtains only if the DO is unmarked, i.e. the DO is in the direct case. In case the DO is in the oblique case and followed by the postposition ko, the verb does not agree with either the ST or the DO:

26. lərkõ   ne   citthiyõ   ko   phaɽ   diya
    boys   ag.   letters   obj.   tore up
    (masc. pl.)   (fem. pl.)   (masc. sg.)

Agreement, then, is not sensitive to the Absolutive/Ergative distinction.

3.2.2 The present participle modifies the head noun coreferential with ST and not DO:

27. [lərkī   kam   kər   rəhī   hε]   lərkī
     girl   work   do   -ing   is   girl

28. kam   kərtī   huī   lərkī
    work   doing   ptcpl.   girl
    The girl who is doing work

29. [lərkī   kam   kər   rəhī   hε]   kam
     girl   work   do   -ing   is   work

30. *lərkī   (ka)   kərta   hua   kam
    The work being done by the girl

The rules that yield participial modifiers--present and past--then do not seem to be sensitive to the Absolutive/Ergative distinction. An alternative explanation for the begavior of the past participial modifier is given in subsection 3.4.2.

3.2.3 The Quantifier Floating rule treats the ST the same way in the imperfective and other non-aspectual tenses as in the perfective. Consider the following:

31. ⎧səb ⎫   lərke   gane   gate   hε̃
    ⎨bəhut⎬
    ⎩kuch ⎭

    ⎧all ⎫   boys   songs   sing   aux.
    ⎨many ⎬
    ⎩some ⎭

$$\left\{\begin{array}{l}\text{All}\\\text{Many}\\\text{Some}\end{array}\right\}\quad\text{boys}\quad\text{sing}\quad\text{songs.}$$

32. *lərke $\left\{\begin{array}{l}\text{səb}\\\text{bəhut}\\\text{kuch}\end{array}\right\}$ gane gate hɛ̃

The boys $\left\{\begin{array}{l}\text{all}\\\text{*many}\\\text{*some}\end{array}\right\}$ sing songs aux.

The boys all sing the songs.

This phenomenon is discussed further in 3.4.3.

3.3   Notice that in the above sentences, the Ergative NP (ST of perfective transitive sentences) is always followed by ne. Ne may thus be given the status of the Ergative-marker. The Ergative NP in Ergative languages does not control processes such as Equi-NP-Deletion (Dixon 1972, quoted in Johnson 1974:84). It would be interesting to determine if the Ergative NP in Hindi-Urdu controls the processes that subject (Nominative) NP's in languages such as English control.

3.3.1   In Hindi-Urdu, the ST, regardless of the marker ne, controls Equi.

33. lərke   ne   caha   [lərka   jae]
     boy   ag.   wanted   boy   go
     The boy wanted [the boy go]

34. lərke   ne   jana   caha
     boy   ag.   to·go   wanted
     The boy wanted to go.

35. lərka   cahta   hɛ   [lərka   jae]
     boy   wants   aux.   boy   go
     The boy wants [the boy go]

36. lərka   jana   cahta   hɛ
     boy   go   wants   aux.
     The boy wants to go.

3.3:2   Both the SI and the ST control Reflexivization in Hindi-Urdu:

37, ram   əpne   ghər   gəya
     Ram   self's   home   went
     Ram went to his house.

38. ram   əpnī   kitab   pərh   rəha   hɛ
     Ram   self's   book   read   -ing   is
     Ram is reading his book.

39. ram   ne   əpnī   kitab   pərhī
     Ram   ag.   self's   book   read
     Ram read his book.

3.3.3 Besides Equi and Reflexivization, both SI and ST control other processes, as well. There is a rule of Conjunction Reduction in Hindi-Urdu which, given 40, produces 41 as its output by deleting the subject of the first conjunct if it is coreferential with the subject of the second conjunct and transforming the finite verb of the first conjunct to an absolutive form:

40. ləṛka   ghər   aya   ɔr   ləṛka   so   gəya
     boy   home   came   and   boy   sleep   went
     The boy came home and went to sleep.

41. ghər   a   kər   ləṛka   so   gəya
     Having come home, the boy went to sleep.

Such conjunction reduction is controlled by SI and ST in Hindi-Urdu, but not by DO:

42. ləṛke   ne   khana   khaya   ɔr   ləṛke   ne
     boy   ag.   meal   ate   and   boy   ag.
           mez   saf   kiya
           table   cleaned
     The boy ate and the boy cleaned the table.

43. khana kha kər ləṛke ne mez saf kiya
     Having eaten, the boy cleaned the table.

44. ləṛkiyã   ghər   aĩ   ɔr   ləṛkiyã   so   gəĩ
     girls   home   came   and   girls   went to sleep
     The girls came home and the girls went to sleep.

45. ghər a kər ləṛkiyã so gəĩ
     Having come home the girls went to sleep.

46. ləṛke   ne   bəcce   ko   pĩṭa   ɔr   bəcca   roya
     boy   ag.   child   obj.   hit   and   child   cried
     The boy hit the child and the child cried.

47. *ləṛke ne pĩṭ kər bəcca roya
     The boy having hit (him) the child cried.

3.3.4   In this connection, it is interesting to compare the properties of the perfective transitive sentences with the properties of the so-called ko-sentences in Hindi-Urdu (Kachru 1970). There is a class of predicated in Hindi-Urdu which requires the logical subject of the sentence to take the postposition · ko on the surface. Consider the following:

48. ləṛke   ko   ghər   yad   aya
     boy   dative home   memory   came
     The boy remembered (his) home.

49. hirən   ko   tĩr   ləga
     deer   dative arrow   hit
     The arrow hit the deer.

The dative subjects of 48 and 49 also control the process of conjunction
reduction discussed above, but they are not accessible to the rule in the
same way as SI and ST are. Consider the following:

50. lərke   ko   ghər   yad   aya   ɔr   lərka   roya
     boy   dative   home   remembered . and   . boy   cried
     The boy remembered (his) home and the boy cried.

51. *ghər   yad   a   kər   lərka   roya
     home   having remembered   boy   cried

3.3.5 The conclusion is unavoidable that in spite of the postposition
ne, ST behaves like SI in many crucial cases and, therefore, ne is not
an Ergative marker. Hence, ST's of perfective transitive sentences in
Hindi-Urdu are not Ergative.

3.4 This conclusion can be further strengthened by the following
facts.

3.4.1 Neither the marker ne nor the verbal agreement pattern discussed
in 3.1 coincides necessarily with transitivity (Kachru 1966). There are
transitive verbs which do not require the marker ne. Such verbs invariably
agree with the ST in the perfective, and not with the DO. Also, there are
intransitive verbs whose subjects occur optionally with ne in the perfective
and in such cases the verb does not agree with the subject.

52. ram   kitab   laya
     Ram   book   brought
     (masc. sg.) (fem. sg.)   (masc. sg.)
     Ram brought the book.

53. lərkiyã   dūdh   laĩ
     girls   milk   brought
     (fem. pl.)   (masc. sg.)   (fem. pl.)

54. lərkiyõ   ne   nəhaya
     girls   ag.   bathed
     (fem. pl.)   (masc. sg.)
     The girls bathed.

55. lərkõ   ne   khãsa
     boys   ag.   coughed
     (masc. pl.)   (masc. sg.)
     The boys coughed.

Note that the verb agrees with the DO only if the ST takes the marker ne
and the DO does not take the object marker ko. The generalization seems
to be this: the verb agrees with the SI or ST if they are not marked, i.e.
if they are not followed by ne; if SI is followed by ne, the verb does
not agree with any NP; if ST is followed by ne and DO is unmarked, the
verb agrees with the DO; if both ST and DO are marked, the verb agrees
with no NP. Verbal agreement thus does not provide any evidence for the

functional identification of DO and SI in Hindi-Urdu; SI, ST, and DO form a definite hierarchy in agreement patterns.

3.4.2 The past participle modifiers seem to modify·the NP's coreferential with the DO or SI, but not with ST. The following data, however, question such a generalization. There are some transitive verbs which yield past participial modifiers which modify the NP coreferential with ST, e.g.:

56. [ləɽkī ne saɽī pəhnī]   ləɽkī
    girl ag. sari wore   girl

57. saɽī   pəhnī̃   huī   ləɽkī
    sari   worn   ptcpl.   girl
    The girl in the sari

58. [ləɽkiyõ   ne   məʈke   uʈhae]   ləɽkiyã
    girls   ag.   pot   lifted   girls

59. məʈke   uʈhaī   huī   ləɽkiyã
    pot   lifted   ptcpl.   girls
    The girls with the pots

Note that these transitive verbs also yield past participial modifiers that modify the NP coreferential with the DO:

60. [ləɽkī ne saɽī pəhnī]   saɽī
    girl ag. sari wore   sari

61. ləɽkī   kī   pəhnī   huī   saɽī
    girl   of   worn   ptcpl.   sari
    The sari worn by the girl

62. [ləɽkiyõ   ne   məʈke   uʈhae]   məʈke
    girls   ag.   pots   lifted   pots

63. ləɽkiyõ ke   uʈhae   hue   məʈke
    girls   of   lifted   ptcpl.   pots
    The pots lifted by the girls

Also, there are intransitive verbs that do not yield past participial modifiers to modify a NP coreferential with SI, e.g.:

64. [ləɽka roya]   ləɽka
    boy   cried   boy

65. *roya   hua   ləɽka
    cried   ptcpl.   boy
    *The cried boy

66. [bəcce   dɔɽe]   bəcce
    children   ran   children

67. *dɔɽe hue bəcce
     ran   ptcpl. children
     *The ran children

    If we assume that the rules that yield present and past participial
modifiers are sensitive to the Absolutive/Ergative distinction, the gram-
maticality of 57 and 59, as well as the ungrammaticality of 65 and 67,
remain unexplained. What seems to be relevant to participialization of
this nature are the following semantic distinctions.[8]
    A semantically-oriented explanation of the facts may be postulated as
follows. The perfective in Hindi-Urdu always denotes the completion of
an action. The completion of an action may mean one of two things:
(1) total cessation of the action with no state resulting from it, or
(2) completion of the action resulting in a state. An action such as
rona 'to cry' is complete in the first sense, whereas an action such as
pəhənna to wear (clothes), to dress oneself' is complete in the second.
The agent of rona, once the action is complete, is not in any state re-
sulting from it, whereas the agent of pəhənna is in the state resulting
from the action once it is complete, i.e., he is dressed. This can be
seen in the following sentences:

68. jo   ləɽka   ro cuka tha   usko mɛ̃ ne   ɔr   rulaya
     rel. boys   cry compl. had him   I   ag. more cry+caus.+perf.
     I made the boy who had cried cry (some) more.

69. *jo   ləɽkī   sarī pəhən   cukī   thī   usko
     rel. girl   sari wear   compl. had   her
          mɛ̃   ne   ɔr   sarī   pəhənaī
          I   ag.   more sari   wear + caus. + pərf.
     *I made the girl who was in a sari wear one more sari.

Note that in 68 and 69 the operator (Kachru 1965 and 1966) cukna marks
the completion of an action even more emphatically than the perfective.
Parallel to the relationship stative:non-stative, it is reasonable to clas-
sify verbs into resultative:non-resultative. Also, notice that verbs
may be resultative with respect to ST or DO. Verbs such as make, paint,
etc., are resultative with respect to the DO. Verbs such as dress, read,
etc., are resultative with respect to ST, hence compounds such as well-
dressed man, well-read person are grammatical in the same way as well-
made dresses and painted surface are. In Hindi-Urdu, verbs which are
resultative with respect to the SI and ST yield past participial modifiers
which modify the NP's coreferential with the SI and ST. Note that with
respect to semantic distinctions such as stative, resultative, etc., lan-
guages may not show universal correspondence in their predicates. In
English, there are lexical verbs (see: look, hear: listen) corresponding
to the stative: non-stative distinction; in Hindi-Urdu, dekhna 'see,
look' and sunna 'hear, listen' are both stative and non-stative.
    To sum up, then, the evidence from participial modifiers does not prove
functional identification of DO and SI, either. The facts about these
modifiers need explanations that take into account deep semantic factors.

3.4.3 Earlier, we have presented data which suggest that quantifiers
in Hindi-Urdu float over DO and SI, but not over ST. The following data,
however, suggest the above hypothesis to be inadequate.

70. ləṛkõ   ne   { səb / bəhut / kuch }   kam   der   tək   kiya

    boys   ag.   { all / much / some }   work   for   long time   did

    The boys did   { all the / much / some }   work for a long time.

71. ləṛkõ   ne   kam   { səb / *bəhut / *kuch }   der   tək   kiya

    *The boys did work   { all / much / some }   for some time.

71 is ungrammatical with the usage of bəhut or kuch because there is another
sentence 72 which is grammatical in a different sense:

73. ləṛko   ne   kam   { bəhut / kuch }   der   tək kiya

    boys   ag.   work   { very / slight }   long time till did

    The boys worked   { for a very long time. / for some time. }

The same is true of 32. 32 is ungrammatical because there is another sen-
tence 73, which is grammatical in a different sense:

73. ləṛke   { səb / bəhut / kuch }   gane   gate   hẽ

    boys   { all / many / some }   songs   sing

    The boys sing   { all the / many / some }   songs.

        The generalization seems to be as follows. Quantifiers are normally
interpreted as qualifying a following nominal in Hindi-Urdu. In case there
is no such following nominal, a quantifier may be interpreted as qualifying
a preceding nominal. As long as no other nominal is available for a quanti-
fier to get attached to, it may float over the nominal it precedes, whether
it be SI or DO or ST. This explains why in 71 the sentence with səb is
marginally acceptable, but is ungrammatical in the sense with bəhut or
kuch (cf. sentence 72). In the case of ST, there is nearly always a
DO to which the quantifier can get attached. Hence, quantifier floating
is blocked in this case. Note that even in the non-perfective tenses,

quantifier floating over ST is blocked. This fact is thus independent of the Absolutive/Ergative distinction.

To sum up the discussion so far: the principles that determine verbal agreement, well-formedness of past participial modifiers, and quantifier floating in Hindi-Urdu are not sensitive to the Absolutive/Ergative distinction and, hence, do not prove the primacy of the Absolutive relation. Hindi-Urdu, therefore, is not Ergative in a 'deep' sense.

3.5 In this section, we discuss some syntactic rules which are sensitive to the Ergative/Absolutive distinction in languages such as Dvirbal (Dixon 1972) which are claimed to be Ergative in the 'deep' sense and see if they are sensitive to the Absolutive/Ergative distinction in Hindi-Urdu, too.

3.5.1 First, we consider relativization. The basic process is as follows: the relative clause precedes the head NP, the coreferential NP in the clause is preceded by a relative marker jo, the head NP is preceded by a correlative-marker vəh, and if no extraposition rules apply, the head NP is deleted. The ergative NP is relativized as readily as the absolutive NP. Compare:

74. jo   lərka   seb   kha   rəha hɛ vəh yəhã̄ rəhega
    rel.m. boy   apple   eat   -ing is correl.m. here will remain
    The boy who is eating the apple will stay here.

75. jis   lərke ne seb   khaya   vəh   əb əngūr nəhī̃ khana cahta
    rel.m. boy ag. apple   ate   correl.m. now grapes not to eat wants
    The boy who ate the apple does not want to eat the grapes now.

3.5.2 Raising (B-raising) does not seem to be sensitive to the Ergative/ Absolutive distinction, either. The rule is governed and the downstairs clause is restricted in terms of its internal structure and modality, e.g. manna, səməjhna, etc., require the lower clause to be of the following structure:

$$NP_{subj.} -- \quad \begin{matrix} Adj. \\ NP \\ pred.\ comp. \end{matrix} \quad --BE$$

Verbs such as dekhna, pana, etc., require the downstairs intransitive or transitive clause to be non-stative and non-perfective. For example, 76 is grammatical, but 77 and 77a are ill-formed:

76. mɛ̃ ne   ram ko seb   khate hue   dekha tha
    I   ag. Ram obj. apple eating   seen   had
    I have seen Ram eating the apple.

77. *mɛ̃ ne   ram ko əxbar   pərhe hue paya
    I   ag. Ram obj. newspaper read   found
    *I found Ram to have read the newspaper.

77a. *mɛ̃ ne   ram ko bazar   gəye hue paya
    I   ag. Ram obj. bazaar gone   found
    I found Ram to have gone to the bazaar.

Notice that the raised element in 76 is an ergative ST, in 76a an (absolutive) SI, yet both are ill-formed.

3.5.3 The evidence from copying rules does not support 'deep' ergativity in Hindi-Urdu, either. Consider the following examples of Right and Left Dislocation:

78. lərke   ne   kəhaniyã   pərhĩ
     boy   ag.   stories   read
     The boy read the stories.

78a. ?usne kəhaniyã pərhĩ, lərke ne
     He read the stories, the boy.

78b. ?lərke ne ve pərhĩ, kəhaniyã
     The boy read them, the stories.

78c. us ne kəhaniyã pərhĩ, us lərke ne jo tumhẽ pəsənd hɛ
     He read the stories, the boy whom you like.

78d. lərke ne ve pərhĩ, ve kəhaniyã jo tumhẽ pəsənd hẽ
     The boy read them, the stories that you like.

79. lərka hə̃sa
     The boy laughed.

79a. ?vəh hə̃sa, lərka
     He laughed, the boy.

79b. vəh hə̃sa, vəh lərka jo gəmgĩn-sa bɛtha tha
     He laughed, the boy who was sitting morose.

Note that both absolutive and ergative NP's can undergo right dislocation, provided they are specific. The right dislocation of non-specific NP's does not result in readily acceptable sentences (78a, b and 79). Left dislocation exhibits the same phenomenon:

80. ?lərka, usne kəhaniyã pərhĩ
     The boy, he read the stories.

80a. ?ve, lərke ne kəhaniyã pərhĩ
     Them, the boy read the stories.

80b. vəh lərka jo tumhẽ pəsənd hɛ, usne kəhaniyã pərhĩ
     The boy you like, he read the stories.

80c. ve kəhaniyã jo tumĥẽ pəsənd hẽ, lərke ne ve pərhĩ
     The stories that you like, the boy read them.

81. ?lərka, vəh hə̃sa
     The boy, he laughed.

81a. vəh lərka jo gəmgĩn-sa bɛtha tha, vəh hə̃sa
     The boy who was sitting morose, he laughed.

4.0 The discussion in 3.1 - 3.5 raises several interesting questions
about Ergativity in Hindi-Urdu. First, any claim about 'deep' ergativity
seems to be suspect. Except for the marker ne, all other facts seem to
be explained in terms of the interaction of several processes. The facts
about verbal agreement (see 3.4.1) point to a general fact about Hindi-Urdu,
namely, that the verb agrees with the subject if it is in the direct case
(i.e. it is not followed by any postposition); otherwise, it agrees with
the DO. If both the S and the DO are in the oblique case (i.e. both are
followed by postpositions), there is no agreement at all; the verb is in
the masculine singular form, which confirms the Postal and Perlmutter
hypothesis about the universal characteristics of agreement rules (Postal
and Perlmutter 1974). We have suggested an explanation of the facts about
participialization in 3.4.2. Some additional remarks here may not be out
of place. Note that ergativity typically affects transitive sentences.
Also, a majority of transitive verbs typically take animate/human subjects.
There seems to be a constraint in Hindi-Urdu which blocks past participial
modifiers with animate/human head nouns, e.g. even nouns coreferential
with animate/human objects are not readily accepted with a past parti-
cipial modifier:

82. sīta ne ləṛke ko bulaya
    Sita ag. boy obj. called
    Sita called the boy.

82a. *sīta ka bulaya hua ləṛka
    Sita   of called   boy

83. ləṛke ne $\begin{Bmatrix} \text{məchlī} \\ \text{gay} \\ \text{bəccī} \end{Bmatrix}$ pəkṛī

    boy ag. $\begin{Bmatrix} \text{fish} \\ \text{cow} \\ \text{child (f.)} \end{Bmatrix}$ caught

83a. lərke kī pəkṛī huī $\begin{Bmatrix} \text{?məchlī} \\ \text{??gay} \\ \text{*bəccī} \end{Bmatrix}$

    boy   of caught $\begin{Bmatrix} \text{fish} \\ \text{cow} \\ \text{child (f.)} \end{Bmatrix}$

The fact that the rule of participialization does not result in parti-
ciples which modify nouns coreferential with ST thus does not seem to be
a consequence of ergativity. The evidence from quantifier floating, dis-
cussed in 3.4.3, does not support 'deep' ergativity, either; rather,
the rule seems to be governed by the position of the quantifier in the
sentence in terms of word order. Other processes discussed in this study
do not support the case of 'deep' ergativity. If it is the case that
the primacy or non-primacy of grammatical relations can be determined only
by their syntactic behavior, the data discussed here do not provide any
evidence for 'deep' ergativity in Hindi-Urdu.

4.1   It is interesting to note that the phenomenon of ergativity in
Hindi-Urdu in this study is largely confined to the western Hindi area.
At least two other varieties of Hindi-Urdu, viz. Eastern and Dakkhini,
do not seem to have the ergative construction in the perfective of ST.
In these varieties, ST is not followed by ne, and the verb agrees with
the ST, e.g.

84.   lə_rka   kitab   pə_rha   hε
      boy (m.s.)   book (f.s.)   read(m.s.)   has
      The boy has read the book.

85.   lə_rkī   əxbar   dekhī   hε
      girl(f.s.)   newspaper (m.s.)   seen   (f.s.) has
      The girl has seen the newspaper.

A study of the dialects and varieties of Hindi-Urdu thus may throw some
additional light on this issue.
      Note that the perfective forms of verbs in modern Indo-Aryan languages,
including Hindi-Urdu, developed from the past passive participle of Old
Indic (Chatterjee 1926). Some cognate languages such as Bengali regularized
the participles by adding personal endings to verbs so that ST in these
languages conforms to the Nominative-Accusative pattern. Several dialects
of the Hindi area, such as Awadhi and Bhojpuri, did the same. It is
interesting to investigate how and why the western dialects of the Hindi are
such as Braj, and western Hindi-Urdu, as well as other cognate languages,
such as Punjabi, Gujarati, etc., developed special markers (such as ne in
Hindi-Urdu) to mark the ST. This topic in historical syntax still awaits
detailed investigation.

4.2   This account of Hindi-Urdu raises some interesting theoretical
questions, such as: Is the primacy or non-primacy of a grammatical rela-
tion always determined only by the syntactic behavior of the argument having
the relation? If the primacy or non-primacy of a grammatical relation
is not determined by the syntactic behavior of the relevant argument,
what is/are the relevant criterion/criteria to determine such primacy?
Is the notion grammatical relation as non-discrete as the categorial no-
tions of 'noun', 'verb', etc., considering the behavior of SI, ST, and
NP_{ko} discussed in 3.3.4?[10]   To what extent are rules of a grammar
governed by ergativity? Can apparent ergativity (as in Hindi-Urdu) be
treated as a target phenomenon in the sense of Green 1974? More work
on the criteria that define grammatical relations and on languages which
are not as clearly ergative as Dyirbal may provide answers to some of
these questions.

NOTES

[1]As Hindi and Urdu, in spite of a slightly different phonological system and a widely divergent lexicon in some 'registers', share a basic 'core' grammar, we have hyphenated the two varieties for the purposes of this paper. All our observations with regard to Hindi and Urdu here apply to both the varieties.

[2]The Accessibility Hierarchy proposed by Keenan and Comrie 1972 is as follows:
  (a) Subject $\geqslant$ direct object $\geqslant$ indirect object $\geqslant$ oblique object $\geqslant$ poss. NP $\geqslant$ obj.-com-particle.
  (b) If $x \geqslant y$ and y dominates z, then $x \geqslant z$ [where $\geqslant$ means "greater than or equal to in accessibility"].

[3]In Nominative-Accusative languages, the subject of intransitive as well as transitive are said to be in the nominative case, whereas in Abso-lutive-Ergative languages, the subject of intransitive and direct object of transitive are said to be in the absolutive, and the subject of transi-tive in the ergative case.

[4]For the entire range of norms, see Sharma 1972, pages 73 - 82.

[5]The past participle form of a verb in Hindi-Urdu is made up of the perfective form of the verb and the perfective form of the verb ho 'be' e.g. sona 'to sleep', soya hua, 'sleep' + perf., ho + perf. In some con-texts, the hua may be deleted, e.g. vəhã bɛthã hua lərka or bɛtha lərka 'the boy seated there'.

[6]This sentence is grammatical in the sense:

  The boys did $\left\{ \begin{array}{l} \text{all the} \\ \text{much} \\ \text{some} \end{array} \right\}$ work.

Note that this is a different sentence and not a version of 16, which would result from Quantifier Floating.

[7]For a discussion of the marker ne, see Kachru 1966, pages 37 - 49.

[8]What follows is some preliminary observations on the phenomenon. It is clear that more work is needed on participialization and on the syntactic and semantic factors relevant for participialization.

[9]Sentences such as the following are not counter-examples to this general statement:
  (i) mɛ̃   ne   usko   sofe   pər   lete   hue   paya
       I   ag.   him   sofa on lie +perf. ptcpl. found
       I found him lying on the sofa.
Verbs such as letna and bɛthna do not occur in the past progressive in Hindi-Urdu:
  (ii) * vəh   sofe   pər $\left\{ \begin{array}{l} \text{bɛth} \\ \text{let} \end{array} \right\}$ rəha   tha

       He was $\left\{ \begin{array}{l} \text{sitting} \\ \text{lying} \end{array} \right\}$ on the sofa.

(i) still carries the meaning 'continuous', as does its translation equivalent in English.

[10]For a detailed discussion of the behavior of SI, ST, the so-called dative subject (i.e. NP_{ko}), and other oblique 'subjects', see Kachru, Kachru, and Bhatia 1975.

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THE 'OBJECT' RELATIONSHIP IN CHI-MWI:NI, A BANTU LANGUAGE

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0. Introduction.
     Most analyses of Bantu grammar (until very recently) have been
analyses of the morphological structure of the various Bantu languages.
This is not surprising. The morphology of these languages is complex
and offers a stimulating field of investigation. Furthermore, most of
the linguists investigating Bantu languages have not been native
speakers of the languages in question. The limitations that this si-
tuation imposes for transformational approaches to syntactic analysis
hardly requires mention. Nor is there even, in many cases, a sub-
stantial body of texts available for examination.
     As a result of the situation outlined above, every area of Bantu
syntax is still almost totally unexplored. The problem of 'gramma-
tical relations' is in no way an exception to this statement. In the
present paper we examine the grammatical relationships exemplified by one
verbal construction--the so-called 'applied' or 'prepositional' verb-- in
Chi-Mwi:ni, a Bantu language closely related to Swahili spoken in the
city of Brava in Somalia.[1] More particularly, we examine certain
patterns of linguistic form that are generally regarded as being
characteristic of the 'object' of the verb in Bantu languages with the
purpose of determining whether there is, in fact, a NP in applied ver-
bal constructions that can (on the basis of these patterns) be identi-
fied unequivocally as the object. We will show that while in a certain
range of cases there is a single NP in applied verbal constructions
that displays all the characteristics of the object of the verb, in yet
other cases no one Np has all the properties commonly associated with
the object: two different NP's each exhibit features that are typically
restricted to the object. In such cases, the label 'object' cannot be
applied exclusively to a single NP. The factors that determine whether
a single NP will possess all the characteristics of the object, or
whether two different NP's will share these characteristics, will be
shown to be basically semantic in nature. In other words, the syntactic
relationship 'object of the verb' in Chi-Mwi:ni is inextricably tied up
with semantic contrasts.
1. Background
     Certain background information about Chi-Mwi:ni grammatical
structure will facilitate discussion. First, it should be noted that
grammatical relations are not formally marked on nouns in any way.
Thus a noun such as chibu:ku 'book' will have the same shape whether
it is functioning as subject, as in (1):[2]
(1)   chibu:ku   chibe:le   'The book is lost.'
         book   is lost
or as 'principal object', as in (2):
(2)   wa:na wachibozele chibu:ku   'The children stole the book.'
         children stole   book
or as a 'subsidiary object', as in (3):

(3)   wa:na wambozełe mwa:limu chibu:ku   'The children stole the book
        children stole   teacher   book   from the teacher.'

(The terms 'principal' and 'subsidiary' are dealt with below.)

    A distinction can be made, however, between what we refer to as an 'unmarked' NP and a 'marked' NP. A NP is unmarked if it is neither preceded by a preposition nor suffixed by the locative suffix -ni. Thus in (3) above, both mwa:limu 'teacher' and chibu:ku 'book' are unmarked NP's. Compare (4) and (5) below:

(4)   mwa:na tinziłe: nama ka: chisu 'The child cut the meat with a
        child   cut   meat with knife a knife.'

(5)   Ja:ma młesełe mwa:na hafisa:ni 'Jama brought the child to the office
        brought child   office-locative

In (4), nama 'meat' is an unmarked NP, but chisu 'knife' is marked, being preceded by the preposition ka 'with'. Similarly, in (5) mwa:na 'child' is an unmarked NP, but ha:fisa 'office' is marked, being suffixed with the locative -ni.

    A second point that requires comment is that Chi-Mwi:ni displays the typical Bantu phenomenon of noun classes, where a noun class is defined in terms of (a) the class prefix (abbreviated CP) that appears on the noun itself and (b) the pattern of 'agreement' that the noun governs. Consider, for example, a noun such as chiguwo 'rag, cloth'. This noun can be analyzed into two parts: the CP chi- and the noun stem -guwo. The CP chi- occurs in a great many nominal forms (chiti 'chair', chisiwa 'island', chiga:ri 'cart', chire:za 'razor', and so on). The noun stem -guwo can occur with other CP's besides chi-; for example, ziguwo 'rags, cloths', and ŋguwo 'clothes'.

    A variety of items must 'agree' with the noun to which they are grammatically linked. For example, adjectives modifying nouns must be assigned an agreement prefix (abbreviated AP) the shape of which is determined by the noun. For example, the noun chiguwo requires that the AP chi- be prefixed to the adjective stem, whereas ziguwo requires zi- and ŋguwo requires n- (which assimilates to the point of articulation of a following stop). The AP that is assigned to items other than adjectives is not always identical in shape to the AP that is assigned to an adjective. For example, the interrogative particle -mpʰí 'which?' is required to have an AP agreeing with the noun that it modifies. In the case of chiguwo and ziguwo, the AP used is the same as occurs with adjective stems: chiguwo chi:mpʰí 'which rag?' and ziguwo zi:mpʰí 'which rags?'. In the case of ŋguwo, however, we find the AP zi- rather than the n- that occurs before adjectives: ŋguwo zi:mpʰí 'which clothes?' (as compared with ŋguwo ni:ŋgi 'many clothes'). The preceding example serves to illustrate another important point: the AP that a noun determines is not necessarily phonologically identical with the CP of the noun itself.

    A noun class is determined, then, by both the CP of the noun and the pattern of agreement that the noun governs. Two nouns that have the 'same; CP (in terms of phonological shape) do not always govern the same pattern of agreement. Compare in this respect the nouns muti 'tree' and muke 'woman'. These nouns have a CP with the shape mu-. They differ, however, in that the AP that these nouns govern is not the same in certain instances. For example, a finite verb in Chi-Mwi:ni typically must have an AP that agrees with the subject of the verb. We

refer to this particular AP as the subject prefix (abbreviated SP). The
SP for muti is u-, as in muti u-burbushile 'the tree fell', whereas
the SP for muke is null, as in muke ∅-teteme:le 'teh woman shivered'.
    A third dimension that is sometimes used to identify the class to
which a noun belongs involves the systematic pairing between singular
and plural forms. A noun like muti (i.e. a noun with the CP mu- that
requires the SP u-) generally has a corresponding plural form with the
CP mi-. Thus the plural of muti is miti 'trees'. A noun like muke
(i.e. a noun with the CP mu- that requires a null SP) generally has
a plural form with the CP wa-. Thus the plural of muke is wake 'wo-
men.
    In addition to the SP, a verb in Chi-Mwi:ni may also have another AP;
this second AP is determined by the object of the verb, and thus we
will refer to it as the object prefix (abbreviated OP). Although the
SP is an obligatory element, the OP may or may not appear on a verb
(generally speaking). The OP often functions as a device for signalling
definiteness, as the examples in (6) illustrate:[3]
(6)   a. Nu:ru ∅-somele chibu:ku   'Nuru read a book.'
            SP read   book
       b. Nu:ru ∅-chi-somele chibu:ku   'Nuru read the book.'
            SP OP read   book
Both the SP and the OP may occur either with or without an overt 'con-
troller' NP present in the sentence. In other words, the NP that deter-
mines the shape of the SP or OP may itself be omitted from the surface
form of the sentence. When the controller NP is omitted, the AP has much
the same effect as an anaphoric pronoun.
(7)   a. wake wa-mw-osheze mwa:na   'The women washed the child.'
            women SP OP washed child
       b. wa-mw-osheze   'They washed him/her.'
            AP OP washed
    In most instances, the SP and OP that a given noun class requires
will be identical phonologically. In (8) we list the main noun classes
in Chi-Mwi:ni (numbered in accordance with the general practice in Ban-
tu linguistic descriptions) together with the SP and OP that they govern.
The SP and OP are first given in their morphophonemic representation. Due
to the operation of various morphophonemic rules, the SP's and OP's are in
many cases pronounced in a form that differs from their basic shape;
therefore, we list the main morphophonemic variants of each of the
prefixes immediately after the morphophonemic representation. The rea-
der is referred to Kisseberth and Abasheikh (forthcoming) for a detailed
discussion of the rules that govern these variations. The purpose of
this chart is simply to help the reader in parsing the many examples
cited in the text.

(8) Noun Class		Example	SP	OP
N.C. 1:	1 sg.	mi 'I'	/ni/: n, m,	same as SP
	2 sg.	we 'you'	∅	/xu/: x
	3 sg.	ye 'he,she'		
		muke 'woman'	∅	/mu/: mw,m
		mwa:na 'child'		
N.C. 2:	1 pl.	si 'we'	/chi/: ch, sh	same as SP
	2 pl.	ni 'you'	/ni/: n	same as SP

	3pl.	wo 'they'			
		wake 'women'	/wa/		same as SP
		wa:na 'children'			
N.C. 3:		muti 'tree'	/u/:	w	same as SP
N.C. 4:		miti 'trees'	/ya/		same as SP
N.C. 5:		ijiwe 'stone'	/i/:	y	same as SP
N.C. 6:		majiwe 'stones'	/ya/		same as SP
N.C. 7:		chiguwo 'rag'	/chi/:	ch, sh	same as SP
N.C. 8:		ziguwo 'rags'	/zi/:	z, s	same as SP
N.C. 9:		nu:mba 'house'	/i/:	y	same as SP
N.C. 10:		nu:mba 'houses'	/zi/:	z, s	same as SP
N.C. 11:		luti 'stick'	/li/: l		same as SP

2. Characteristics of the Object.

The 'object' of the verb in Bantu languages is most often identified (in the literature on Bantu languages) on the basis of three properties: (a) it is the NP that controls the OP that may appear on the verb; (b) it is the NP that (in neutral contexts at least) immediately follows the verb; and (c) it is the NP that may be promoted to subject via the syntactic process of Passivization. Bantu languages appear to differ with respect to whether just one NP in a clause may have any or all these characteristics or whether more than one NP can share these characteristics. If one considers just morphologically simple (i.e. non-derived) verbs in Chi-Mwi:ni, it seems to be the case that in a given clause there will be only one NP displaying the features cited above. This NP is always unmarked--that is, it is neither preceded by a preposition nor suffixed with the locative -ni.

In a clause there may be more than one unmarked non-subject NP. In his pioneering work on Bantu syntax, C. M. Doke refers to the un-marked NP that controls the OP and that normally follows immediately after the verb as the principal object of the verb. Any other unmarked non-subject NP's are referred to by Doke as subsidiary objects.[4] In or-der to illustrate this distinction between principal and subsidiary ob-jects, consider the following Chi-Mwi:ni sentence:

(9)   wa:na   wa-m-boze∤e mwa:limu zibu:ku 'The children stole the books
          children SP OP stole teacher books   from the teacher.'

In (9), the OP on the verb agrees with mwa:limu (a 3sg. Class 1 noun). If the verb in (9) were to have an OP agreeing with zibu:ku (a Class 8 noun), an ungrammatical sentence would result, regardless of the rela-tive ordering of mwa:limu and zibu:ku.

(10)   *wa:na wa-zi-boze∤e   mwa:limu zibu:ku
              SP OP   zibu:ku mwa:limu

Thus, of the two unmarked non-subject NP's in (9), only mwa:limu can control the OP. In Doke's terminology, mwa:limu is the principal object in (9), while zibu:ku is a subsidiary object.

It will be noted that not only does mwa:limu control the OP in (9), it also occurs in the position immediately after the verb. (9) represents the 'normal' word order: no special emphasis is placed on either mwa:limu or zibu:ku. Although we have not done an intensive study of sentence stress in Chi-Mwi:ni, it appears that in neutral sentences the right-most word in the verb phrase is more heavily stressed than preceding words. Stress is generally on the penultimate

syllable of a word, but under various conditions may be on the last
syllable. In (9), zibu:ku is stressed more heavily than mwa:limu. If
zibu:ku is placed before mwa:limu, a grammatical sentence results only
if zibu:ku bears heavier stress than mwa:limu. Thus (11) is well-
formed:
(11)   wa:na wa-m-bozełe zibú:ku mwa:limu 'The children stole books
              SP OP   from the teacher.'
where the stress mark on zibu:ku indicates that it is more heavily stressed
than the following word(s) in the verb phrase, contrary to the usual
situation. The effect of moving a subsidiary object into position after
the verb is to put special emphasis on it.
       The principal object not only governs the OP and immediately follows
the verb in the normal word order, it is also able to be made the sub-
ject of a passive construction. (12) is the passive variant of (9):
(12)   mwa:limu ∅-bozela zibu:ku na wa:na   'The teacher had some
        teacher SP was stolen books by children   books stolen (from him)
                                                    by the children.'[5]
In (12), mwa:limu is the subject of the passive verb bozela. The noun
zibu:ku cannot be the subject of this passive verb; (13) is ungram-
matical:
(13)   *zibu:ku zi-bozela mwa:limu na wa:na   'The books were stolen
         books   SP were stolen teacher by children from the teacher by the
                                                    children.'
It is the presence of mwa:limu in a sentence such as (9) that prevents
zibu:ku from functioning as the principal object of the verb and thus
being eligible for passivization. For a sentence such as (14) is well-
formed:
(14)   wa:na wa-zi-bozełe zibu:ku 'The children stole the books.'
        children SP OP stole books
That is, the verb 'steal' (-bo:ł- is the underlying representation of the
verb root) can take either one unmarked non-subject NP, as in (14), or
two such NP's as in (9). When zibu:ku occurs as the only unmarked non-
subject NP, as in (14), then it controls the OP on the verb and can also
be made the subject of a passive construction. (15) is the passive
variant of (14):
(14)   zibu:ku zi-bozela na wa:na 'The books were stolen by the children.'
        books   SP were stolen by children
The ungrammaticality of (13) is apparently, then, the direct consequence
of the fact that when -bo:ł 'steal' has two unmarked non-subject NP's,
the indirectly affected NP (mwa:limu) functions as the principal
object while the directly affected NP (wa:na) is relegated to the role of
subsidiary object.
       The behavior of -bo:ł- is typical of verbs that allow two unmarked
non-subject NP's. (16) illustrates the behavior of the verb -p- 'give'.
(16)   ni-m-pełe Ja:ma kujá 'I gave Jama food.'
        SP OP gave   food
The noun Ja:ma, a proper name, controls the OP in (16); an ungrammatical
sentence results if the verb agrees with kuja (a Class 9 noun).
(17)   *ni-'i-pełe Ja:ma kujá
Not only does Ja:ma control the OP in (16), it is also located immediately
after the verb in the unmarked word order. Furthermore, Ja:ma can be

passivized while kuja cannot be.
(18)   Ja:ma ∅-pela: kuja na:mi 'Jama was given food by me.'
            SP was given food by me
(19)   *kuja i-pela   Ja:ma na:mi 'Food was given to Jama by me.'
            food SP was given

   Ja:ma, a NP indirectly affected by the verb, exhibits the behavior
of the principal object, while kuja, the NP directly affected, func-
tions as the subsidiary object. In the preceding examples the NP
indirectly affected refers to a human, but this is not always the case.
When an inanimate NP is the indirectly affected one, we find that it
too functions as the principal object, though with one variation in be-
havior.
(20)   Ali ∅-pashile chiga:ri o:liyo 'Ali oiled the cart.'
            AP applied cart   oil
In (20), chiga:ri is the indirectly affected NP, while o:liyo is directly
affected. Chiga:ri exhibits the expected behavior of a principal object.
It can control the OP on the verb 'apply' (-pak-is the underlying
representation of this verb), whereas o:liyo cannot.
(21)   Ali ∅-sh-pashile chiga:ri o:liyo
               SP OP
(22)   *Ali ∅-i-pashile   chiga:ri o:liyo
                              o:liyo chiga:ri

chiga:ri can be passivized, o:liyo cannot be.
(23)   chiga:ri sh-pashila o:liyo na Ali
                     SP
(24)   *o:liyo i-pashila chiga:ri na Ali
                  SP

   The one essential point of difference between (20) and the examples
cited earlier in (9) and (16) has to do with word order. It is possible
to move o:liyo next to the verb in (20) without therby putting particular
emphasis on it.
(25)   Ali ∅-pashile o:liyo chiga:ri
(25) is pronounced like (20), that is, with the expected stress pattern
whereby the rightmost word in the verb phrase is more heavily stressed
than preceding words. Of course, a sentence like (26) is also possible,
where o:liyo has heavier stress than chiga:ri.
(26)   Ali ∅-pashile o:liyo chiga:ri 'Ali applied oil to the cart.'
But in (26) special emphasis is being placed on o:liyo, which is not
true of (25).

   To summarize what has been shown in this section, if a morphologically
simple verb allows two unmarked non-subject NP's, the indirectly affected
NP will function as principal object and the directly affected NP as a
subsidiary object. The principal object controls an OP on the verb and
can be passivized. The principal object occurs immediately after the verb
in the normal word order, though if the principal object is inanimate
the subsidiary object may also occur immediately after the verb.
3. The 'Applied' Verb.

   Let us turn now to the main topic of this papper: what is tradi-
tionally referred to by Bantuists as the 'applied' or'prepositional'
form of the verb. This verbal form is characterized, in Chi-'wi:ni, by
the occurrence of a suffix -il-, which has several variant forms: -el-,
-il-, -el-, -iliz-, -elez-. The morphophonemic principles governing the

selection of the correct shape of this suffix are given in Kisseberth
and Abasheikh (1974b) and, being rather complex, are not repeated here.
In order to make clear to the reader that a given verbal form is an
applied verb, we will capitalize the applied suffix whenever it occurs
in our transcriptions.

The semantic functions of the applied verb in Chi-Mwi:ni are va-
ried; we restrict ourselves to three primary uses. We label these
uses as (1) benefactive, (2) indirective, and (3) instrumental. The
benefactive use will be dealt with first.

3.1. The Benefactive Applied Verb.

The benefactive use of the applied verb can be illustrated by
considering the following pair of sentences:

(27)   a. Hamadi ∅-pishile cha:kuja 'Hamadi cooked food.'
               SP cooked   food

      b. Hamadi ∅-wa-pikILile wa:na cha:kuja
               SP OP cooked-APPL children food
         'Hamadi cooked food for the children.'

In (27a) cha:kuja is the principal object of the verb 'cook' (which
has -pik- as the underlying form of the verb root). cha:kuja may govern
an OP, as (28) shows.

(28)   Hamadi ∅-sh-pishile cha:kuja 'Hamadi cooked the food.'
             SP OP

Furthermore, cha:kuja may become the subject of a passive construction
based on (27a).

(29)   cha:kuja sh-pishila na Hamadi 'The food was cooked by Hamadi.'
         food   SP was cooked by

Turn now to (27b). In this sentence wa:na 'children' governs the
OP on the verb, not cha:kuja (wa:na is a 3 pl. Class 2 noun and thus
requires the OP -wa-). A sentence such as (30), where cha:kuja
controls the OP, is ungrammatical.

(30)   *Hamadi ∅-sh-pikILile wa:na cha:kuja
             SP OP

Placing cha:kuja next to the verb in (30) would in no way render the
sentence acceptable.

wa:na can also be made the subject of a passive variant of (27b),
whereas cha:kuja cannot be. Consequently, (31) is well-formed, but
(32) not.

(31)   wa:na wa-pikILila cha:kuja na Hmamdi
        children AP was cooked-APPL food by
        'The children had food cooked for them by Hamadi.'

(32)   *cha:kuja sh-pikILila wa:na na Hamadi   'Food was cooked for the
             SP   children by Hamadi.'

It is apparent, then, that wa:na is the principal object in (27b) and
not cha:kuja. Word order confirms this, since wa:na is located imme-
diately after the verb in the normal word order.

At this point let us introduce a certain amount of terminology
that will be of use in our discussion of the applied verb. We will refer
to the verb in (27a), which lacks the applied suffix, as the 'basic'
form of the verb. The verb in (27b) iwll be referred to as the 'applied'
form. What we are terming here as the basic form may itself be mor-
phologically complex, but this possible complexity is irrelevant to the

present discussion. The basic form of the verb is converted into the applied form by the addition of the suffix -il- (in one of its sur-face shapes). The applied form of the verb typically allows an un-marked non-subject NP to occur that the basic form of the verb does not allow. In (27b) this 'extra' NP is wa:na 'children'. We refer to this extra NP as being 'dependent' upon the applied form. That is, this NP could not occur in the sentence (as an unmarked NP) except by virtue of the fact that the verb is in the applied rather than its basic form. In the case of the benefactive applied, we refer to this extra NP as the 'beneficiary'. The NP that is dependent on the applied verb (the beneficiary, in the present case) typically functions as the princi-pal object of the verb. We have seen that wa:na in (27b) governs the OP on the applied verb, can be passivized, and occurs immediately after the verb in the normal word order. The principal object of the basic verb, cha:kuja in (27a), ceases to be the principal object when the verb is in the applied form. We will say that the object of the basic verb is 'displaced' when the verb is put into the applied form. wa:na in (27b) will be said to have displaced cha:kuja. Displaced NP's function as subsidiary objects (in Doke's terms); that is, they remain unmarked, but do not exhibit the properties of the principal object.

Additional examples of benefactive applied verbs are cited in (33)-(35):

(33) a. A:sha ∅-y-andishiłe: xati 'Asha wrote the letter.'
              SP OP wrote   letter

      b. A:sha ∅-mw-andikILile Nu:ru xati 'Asha wrote the letter for
              SP OP wrote-APPL   letter   Nuru.'

      c. Nu:ru ∅-andikILila: xati na A:sha 'Nuru had the letter
              SP was written-APPL letter by   written (for him) by Asha.'

      d. * xati y-andikILila Nu:ru na A:sha 'The letter was written
              letter SP was written-APPL by   for Nuru by Asha.'

(34) a. wa:na wa-'i-pezełe: nthi 'The children swept the floor.'
          children SP OP swept floor

      b. wa:na wa-m-pelELe: muke nthi
          children SP OP swept-APPL woman floor
          'The children swept the floor for the woman.'

      c. muke ∅-pelELa: nthi na wa:na
          woman SP was swept-APPL floor by children
          'The woman had the floor swept (for her) by the children.'

      d. *nthi i-pelELa: muke na:na
          floor SP was swept-APPL woman by children
          'The floor was swept for the woman by the children.'

(35) a. Ja:ma ∅-i-tiłanziłe: nama 'Jama cut the meat.'
              SP OP cut   meat

      b. Ja:ma ∅-sh-tiłangILile chija:na nama
              SP OP cut-APPL small child meat
          'Jama cut the meat for the small child.'

      c. chija:na sh-tiłangILila: nama na Ja:ma
          small child SP was cut-APPL meat by
          'The small child has the meat cut (for him) by Jama.'

      d. *nama i-tiłangILila chija:na na Ja:ma
          meat SP was cut-APPL small child by
          'The meat was cut for the small child by Jama.'

In each of these examples it can be seen that the NP that is dependent on the applied form of the verb is the NP that governs the OP on the applied verb (cf. the (b) sentences), and can be passivized (cf. the (c) sentences). The NP that is displaced by the dependent NP cannot be passivized (cf. the (d) sentences). The normal word order, illustrated by the (b) sentences in (33)-(35), has the dependent NP occurring after the verb before the displaced NP. If the displaced NP is placed in position after the verb, it must bear heavier stress than the dependent NP.

(36)   A:sha ∅-mw-andikILile: xáti Nu:ru 'Asha wrote a letter for Nuru.'

The beneficiary in a benefactive applied construction is generally a human NP, since actions are typically performed for the benefit of humans rather than inanimate objects. Nevertheless, one can find instances of benefactive applied constructions where an inanimate NP functions as teh beneficiary.

(37)   Ja:ma ∅-łetELele sufuriya iyi shfiniko
                SP brought-APPL pan this lid
        'Jama brought a lid for this pan.'

The normal word order is that given in (37), with sufuriya iyi preceding shfiniko. This word order suggests that sufuriya iyi is the principal object. The evidence provided by passivization supports this view, since it is possible for sufuriya iyi to passivize but not for shfiniko.

(38)   sufuriya iyi i-łetElela shfiniko na Ja:ma
            pan this SP was brought-APPL lid by
        'This pan was brought a lid by Jama.'

(39)   *shfiniko chi-łetELela   sufuriya iyi na Ja:ma
            lid   SP was brought-APPL pan this by

Furthermore, shfiniko cannot control an OP on the applied verb, confirming that it has been displaced by sufuriyq iyi.

(40)   *Ja:ma ∅-chi-łetELele sufuriya iyi shfiniko

Moving shfiniko next to the verb in (40) would not alter its ungrammaticality at all. A sentence such as (41), where sufuriya iyi controls the OP is well-formed,

(41)   Ja:ma ∅-i-łetELele sufuriya iyi shfiniko
                SP OP

The reader is reminded, though, that in Chi-Mwi:ni the OP is used to definitize a NP, and is much more common when the NP is human than when not.

In (37) the beneficiary is inanimate and the NP that is displaces is also inanimate. The displaced NP can, however, be a human, as in (42).

(42)   Nu:ru ∅-patILile ga:ri shufe:ri 'Nuru got a driver for the car.'
                SP got-APPL car driver

The beneficiary in (42) is, again, the principal object. The normal word order is for ga:ri 'car' to precede shufe:ri 'driver'. Furthermore, ga:ri can be made the subject of a passive variant of (42).

(43)   ga:ri i-patILila   shufe:ri na Nu:ru
            car   SP was gotten-APPL driver by
        'The car was gotten a driver by Nuru.'

A sentence like (44) is also well-formed, but is the passive counterpart of (45) rather than (42):

(44) shufe:ri -patILila   ga:ri na Nu:ru
     driver SP was gotten-APPL car by
     'The driver had a car gotten (for him) by Nuru.'
(45) Nu:ru ø-m-patILile shufe:ri ga:ri 'Nuru got a car for the driver.'
           SP OP got-APPL driver   car

In (45) shufe:ri is the beneficiary and ga:ri the displaced NP, in
contrast with (42) where the roles are reversed.

The data in this section have shown that the applied verb can con-
vey the notion of performing the action specified by the basic verb for
the benefit of someone or something. The reader might well be wondering
whether a benefactive notion can be conveyed by using the basic verb
plus a preposition in front of the beneficiary NP. The preposition that
one might expect to be used in such a fashion in Chi-Mwi:ni would be ka
(which has a variety of uses, two of which will be noted below in the course
of discussing the indirective and the instrumental applied verbs).
But sentences like the ones in (46) are not well-formed (in the in-
tended interpretation).

(46) a. *Hamadi ø-pishile cha:kuja ka wa:na
               SP cooked food   for children
        'Hamadi cooked food for the children.'
     b. *A:sha ø-andishile: xati ka Nu:ru
              SP wrote   letter for
        'Asha wrote a letter for Nuru.'
     c. *wa:na wa-pezele: nt^hi ka: muke
              SP
        'The children swept the floor for the woman.'
     d. *Ja:ma ø-tilanzile: nama ka chija:na
               SP cut   meat for child
        'Jama cut the meat for the small child.'

Thus although the benefactive applied verb conveys a 'prepositional'
notion, this notion cannot be conveyed in Chi-Mwi:ni through the use
of a preposition. It must be expressed by the applied form of the verb.
3.2. The Indirective Applied Verb.

We turn now to a consideration of the indirective use of the applied
verbal form. Note the following pair of sentences:

(47) a. Nu:ru ø-chi-lesele chibu:ku 'Nuru brought the book.'
              SP OP brought book
     b. Nu:ru ø-m-letELele mwa:limu chibu:ku
              SP op brought-APPL teacher book
        'Nuru brought the book to the teacher.'

chibu:ku is the principal object of the basic verb in (47a), as can be
seen from the fact that it can control an OP on the verb (cf. (47a))
and can be passivized, as (48) shows.

(48) chibu:ku chi-lesela   na Nu:ru 'The book was brought by Nuru.'
       book   SP was brought by

But in (47b) mwa:limu is the principal object, as can be seen from the
fact that it governs the OP on the verb and is located immediately
after the verb in the normal word order. Furthermore, mwa:limu can be
passivized.

(49) mwa:limu ø-letELela   chibu:ku na Nu:ru
      teacher SP was brought-APPL book by
      'The teacher was brought the book by Nuru.'

chibu:ku, which functions as the principal object in (47a), ceases to
have this function in (47b). It cannot control the OP on the applied
verb. (50) is ill-formed.

(50)   *Nu:ru ∅-chi-ɫetELele mwa:limu chibu:ku
          SP OP

Moving chibu:ku into position after the verb in (50) does not make the
sentence grammatical. Nor can chibu:ku in (47b) be passivized.

(51)   *chibu:ku chi-ɫetELela mwa:limu na Nu:ru
        'The book was brought to the teacher by Nuru.'

    Notice that the verb 'bring' (which has -ɫe:t- as the underlying
verb root) allows one unmarked non-subject NP. By adding the applied
suffix to this basic verb, we get a verbal form that allows two unmarked
non-subject NP's. mwa:limu in (47b) is the NP that is dependent on the
applied verb, and once again we see that the dependent NP is the one
that functions as principal object. chibu:ku, which is the principal
object of the basic verb in (47a, is displaced in (47b) and functions as
a subsidiary object. We have labeled the applied verb in (47b) as
'indirective'; this term is intended to indicate that the action express-
ed by the basic verb is directed towards someone or something. We
shall refer to the NP that is dependent upon the indirective applied verb
as the 'indirect' NP. mwa:limu in (47b) is the indirect NP, and chi-
bu:ku is the NP that it displaces.

    Additional examples of the indirective applied verbal construc-
tion are given below.

(52)   a. A:sha ∅-y-andishiɫe: xati   'Asha wrote the letter.'
                SP OP wrote letter

       b. A:sha ∅-mw-andikILile Nu:ru xati
                SP OP wrote-APPL   letter
           'Asha wrote a letter to Nuru'

       c. Nu:ru ∅-andikILila: xati na A:sha
                SP was written-APPL letter by
           'Nuru had a letter written (to him) by Asha.'

       d. *xati y-andikILila Nu:ru na A:sha
           letter SP was written-APPL by
           'The letter was written to Nuru by Asha.'

(53)   a. mwa:na ∅-tawañize ma:yi 'The child spilled water.'
           child SP spilled water

       b. mwa:na ∅-m-tawañIɫIZe Aɫi ma:yi 'The child spilled water on Ali
           child SP OP spilled-APPL water

       c. Aɫi ∅-tawañIɫIZa ma:yi na mwa:na
               SP was spilled-APPL water by child
           'Ali had water spilled on him by the child.'

       d. *ma:yi ya-tawañIɫIZa Aɫi na mwa:na
           water SP was spilled-APPL by child
           'Water was spilled on Ali by the child.'

(54)   a. Ja:ma ∅-s-peɫesheɫe zibu:ku 'Jama took/sent the books.'
                SP OP took/sent books

       b. Ja:ma ∅-i-peɫekELele madrasa zibu:ku
                SP OP sent-APPL school books
           'Jama sent the books to the school.'

      c.   madrasa i-peɫekELela   zibu:ku na Ja:ma
          school SP was sent-APPL books   by
          'The school was sent books by Jama.'
      d.   *zibu:ku s-peɫekELela   madrasa na Ja:ma
          books   SP were sent-APPL school by
          'The books were sent to the school by Jama.'

The (a) sentences in (52)-(54) have a basic verb that allows one unmarked
non-subject NP. The (b) sentences show that the addition of the
applied suffix allows an additional unmarked NP to occur; this extra
NP is the one that we are calling the indirect NP. The (c) sentences
show that this indirect NP can be passivized, while the (d) sentences
show that the NP displaced by the indirect NP cannot be.

    In some (but not all) cases, a non-applied verb in conjunction with
the preposition ka may function similarly to the indirective applied
verb. Thus (55) below is equivalent in meaning to (52b).

(55)] A:sha ∅-andshiɫe: xati ka Nu:ru   'Asha wrote a letter to Nuru.'
       SP wrote   letter to

Unlike (52b), (55) cannot also be understood as meaning that Asha wrote
a letter for Nuru. The prepostion ka does not convey a benefactive
notion. (55) is, however, still ambiguous. While ka Nu:ru can mean
'to Nuru', it is also interpretable as 'at Nuru's place'.

    In (55) xati functions as the principal object, as the examples in
(56) make clear.

(56)   a.   A:sha ∅-y-andishiɫe: xati ka Nu:ru
               SP OP wrote   letter to Nuru
        'Asha wrote the letter to Nuru.'
      b.   xati y-andishila: xati na A:sha
          letter SP- was written to by
        'The letter was written to Nuru by Asha.'
      c.   * (ka) Nu:ru ∅-andishila: xati na A:sha
                  SP was written letter by
        'Nuru was written a letter by Asha.'

(56a) shows that xati can govern an OP on the verb; (56b) that xati
can be passivized; and (56c) that Nu:ru cannot be passivized, regardless
of whether the preposition ka precedes it or not.

    Not all indirective applied verbs have an equivalent sentence
involving the basic verb plus the preposition ka. Consider, for in-
stance, (57) and (58).

(57)   ni-m-tumiɫe Ja:ma ka Nu:rú
      SP OP sent   to
      'I sent Jama to Nuru (i.e. to tell Nuru something).'
(58)   ni-m-tumILile Nu:ru Ja:má
      SP OP sent-APPL
      'I sent Jama to Nuru (i.e. to get him).'

Although in both (57) and (58), Jama is being sent and Nuru is his
destination, the two sentences are given different interpretations as
to the purpose of the sending -- in one case it is to inform Nuru, in
the other case it is to get him.

    (59) and (60) provide another example where the two kinds of
construction are not equivalent in meaning.

(59)   mwa:limu ∅-ɫeseɫe chibu:ku ka Nu:ru
      teacher SP brought book to
      'The teacher brought the book to Nuru's place.'

(60)   mwa:limu ∅-m̄-ɫetELele· Nu:ru chibu:ku
        teacher SP OP brought-APPL book
        'The teacher brought the book to Nuru.'

In (59) ka Nu:ru is interpreted as 'to Nuru's place' rather than simply 'to Nuru', whereas in (60) Nu:ru is the recipient (and is not necessarily at his home when he gets the book).

     Because of examples such as the ones in (57)-(58) and (59)-(60), it is difficult to view the indirective applied verb as simply a variant of the corresponding basic verb plus the preposition ka before the indirect NP. While the benefactive applied verb never has an equivalent construction involving the basic verb plus a preposition, the indirective applied verb sometimes has such an equivalent -- but not always.

3.3 The Instrumental Applied Verb.

     The third principal use of the applied verb stem is to convey the concept of performing an action by means of an instrument. This use can be illustrated by examining the following pair of sentences:

(61)   a. Nu:ru ∅-tiɫanziɫe: nama ka: chisu
                  SP cut   meat with knife
            'Nuru cut the meat with a knife.'
        b. chisu, Nu:ru ∅-tiɫangILile: nama
            knife,   SP cut-APPL   meat   ·
            'The knife, Nuru cut meat with (it).'

In (61a) the NP that refers to the means by which the cutting is accomplished is preceded by the preposition ka; the verb is in its basic form. In (61b), on the other hand, the instrument is no longer preceded by the preposition ka and the verb is in its applied form. (we cite the instrumental applied verb with the instrument 'topicalized' due to the fact that this verbal form is typically used when the instrument is the topic, what the sentence is 'about'. See below.) (61a) and (61b) are equivalent in terms of meaning, and in general it is the case that for every basic verb that can·occur with a ka-instrumental phrase, there is a corresponding applied verb which allows the instrument to occur unmarked. In other words, the situation here is different from the situation described in 3.1, where we saw that a benefactive applied verb could not be replaced by the basic verb plus a preposition and have the same meaning, and also different from the situation in 3.2, where we saw that an indirective applied verb sometimes had an equivalent sentence involving the basic verb and a preposition, but not always. The instrumental applied verb always has a corresponding sentence involving the basic verb plus ka.

     Nevertheless the instrumental applied construction is not equivalent in all respects to the basic verb plus ka. The instrumental applied berb is limited in its occurrence to contexts where the instrument is the 'topic' or, at least, 'presupposed' (not 'asserted'). As evidence for this claim, we can cite several restrictions on the instrumental applied construction that seem to reflect this contextualization. First of all, consider the process of topicalization, whereby a NP is extracted from its original position in the sentence and fronted. (61b) shows us that an instrument in an applied construction can be topicalized. But other non-subject NP's cannot be topicalized when the verb is in the instrumental applied form.

(62) *naɯa, Nu:ru ∅-tiɬangILile: chisu
      meat   SP cut-APPL   knife

In contrast, the benefactive applied verbal construction permits both
the beneficiary and also a NP displaced by a beneficiary to topicalize.

(63) a. mwa:na, Nu:ru ∅-m-tiɬangILile: nama
          child   SP OP cut-APPL   meat
          'The child, Nuru cut the meat (for him).
      b. nama, Nu:ru ∅-m-tiɬangILile mwa:na
          meat   SP OP cut-APPL child
          'The meat, Nuru cut for the child.'

Similarly, the indirective applied verbal construction permits both the
indirect NP and also the NP that is displaces to topicalize.

(64) a. Nu:ru, A:sha ∅-mw-andikILile: xati
                       SP OP wrote-APPL letter
          'Nuru, Asha wrote him a letter.'
      b. xati, A:sha ∅-mw-andikILile Nu:ru   'The letter, Asha
          letter   SP OP wrote-APPL   wrote it to Nuru.'

    A second restriction showing that the instrumental applied verb
is contextually limited involves question formation. One cannot ques-
tion the instrument, if the instrumental applied verb is used. Thus
(65) is ill-formed.

(65) *Nu:ru ∅-tiɬangILi:lé-ni nama
           SP cut-APPL what meat
      'What did Nuru cut the meat with?'

One can, however, question the NP displaced by the instrument.

(66) Nu:ru ∅-tiɬangIL:lé-ni chisu
            SP cut-APPL what knife
      'What did Nuru cut with the knife?'

If one wishes to question an instrument, the basic verb must be used
rather than the applied verb.

(67) Nu:ru ∅-tiɬanziɬe ká ni nama
            SP cut with what   meat
      'What did Nuru cut the meat with?'

In comparison, the benefactive applied verbal construction allows both
a beneficiary as well as a NP displaced by a beneficiary to be questioned.

(68) a. Nu:ru ∅-m-tiɬangILile ńa:ni nama
                SP OP cut-APPL who   meat
          'Who did Nuru cut the meat for?'
      b. Nu:ru ∅-m-tiɬangILi:lé-ni mwa:na   'What did Nuru cut for
                SP OP cut-APPL what child   the child?'

Similarly, the indirective applied verb allows both the indirect NP and
the NP it displaces to be questioned.

(69) a. Nu:ru ∅-m-ɬeELele ńa:ni chibu:ku
                SP OP brought-APPL who book
          'To whom did Nuru bring the book?'
      b. Nu:ru ∅-m-ɬetELe:lé-ni mwa:limu
                SP OP brought-APPL what teacher
          'What did Nuru bring the teacher?'

    Further evidence of the restricted use of the instrumental applied
verb is provided by relativization. When an unmarked NP in a relative
clause is identical to the head noun of the relative clause, the un-
marked NP is simply deleted. A NP that is preceded by a preposition

cannot be so deleted; it msut be replaced by a 'pro' form. If the re-
lative ˉverb is in the instrumental applied form, it is possible for the
instrument to be deleted under identity with the head noun. (70) is
a well-formed relative construction.

(70)   chisu cha Nu:ru ∅-tiɬangILilo: namá ⌐ . .
        knife RM   SP‾ cut-APPL   meat
        'The knife that Nuru cut the meat with . . .'

        (RM = relative marker, consisting of an agreement prefix plus -a.)
It is not possible, however, to have a relative construction where the‾
NP displaced by the instrument is deleted under identity with the head
noun.

(71)   *nama ya Nu:ru ∅-tiɬangILilo: chisú. . .
        meat RM   SP‾ cut-APPL   knife
        'The meat that Nuru cut with the knife. . .'

In order to get a well-formed relative clause, it is necessary to put
the verb in its basic form and have the preposition ka precede the instru-
ment.

(72)   nama ya Nu:ru ∅-tiɬanziɬo ka: chisú. . .
        meat RM   SP‾ cut with   knife
        'The meat that Nuru cut with the knife. . .'

The above data show that if the relative verb is an instrumental applied,
the relative clause must be providing information about the instrument
rather than about the NP that the instrument displaces.

    Compare the benefactive applied verb. Both the beneficiary and the
NP displaced by the beneficiary can be deleted under identity with the
head noun of a relative construction.

(73)   a. mwana wa Nu:ru ∅-m-tiɬangILilo: namá
           child RM   AP OP‾ cut-APPL   meat
          ''The child who Nuru cut the meat for. . .'
        b. nama ya Nu:ru ∅-m-tiɬangILilo mwa:ná. . .
           meat RM   SP OP‾ cut-APPL child
          'The meat that Nuru cut for the child. . .'

Similarly, both an indirect NP and the NP that it displaces can be de-
leted under identity with the head noun of a relative construction.

(74)   a. mwalimu wa Nu:ru ∅-m-ɬetELelo chibu:kú. . .
           teacher RM   SP OP brought-APPL book
          'The teacher to whom Nuru brought the book. . .'
        b. chibuku cha Nu:ru ∅-m-ɬetELelo mwa:limú. . .
           book   RM   SP OP brought-APPL teacher
          'The book that Nuru brought to the teacher. . .'

    Yet another restriction on the instrumental applied verb involves
sentence stress. It was pointed out in section 2 that the most neu-
tral stress pattern appears to be one where the rightmost word in the
verb phrase is more heavily stressed than preceding words. This stress
pattern would be used, for example, if the entire verb phrase is part
of what is being asserted in the sentence and no special emphasis is
being given to a particular element in the verb phrase. When we exa-
mine instrumental applied verbs we find that a sentence containing such a
verb cannot be pronounced with a neutral stress pattern. Both (75a)
and (75b) are inappropriate sentences.

(75) a. *Nu:ru ∅-tiɫangILile: nama chísu
                SP ͞cut~APPL   ͞meat knife
          'Nuru cut the meat with a knife.'
      b. *Nu:ru ∅-tiɫangILile: chisu náma
          'Nuru cut the meat with a knife.'

This absence of a neutral stress pattern for sentences containing an
instrumental applied verb fits in with the observation that such verbs
are used only when the instrument is presupposed and not asserted. This
observation also seems to be involved in the explanation for the fact
that only (76a) is grammatical and not (76b).

(76) a. Nu:ru ∅-tiɫangILile: náma chisu
          'Nuru cut the ͞meat wit͞h a knife.'
      b. *Nu:ru ∅-tiɫang͞ILile: chísu nama
          'Nuru cut ͞the meat iwth a knife.'

(76a) asserts that it was meat that was cut with a knife. The instru-
ment is presupposed here, and the sentence is well-formed. But (76b)
asserts that a knife was used to cut the meat; this sentence is ill-
formed, since the instrument cannot be asserted, but rather must be
presupposed, if the instrumental applied verb is used. To render (76b)
acceptable, the verb must be put in its basic form, with ka placed in
front of the instrument.

(77) Nu:ru ∅-tiɫanziɫe ka: chísu nama 'Nuru cut the meat with a
      knife.'

    Benefactive applied verbs behave quite differently from instru-
mental applied verbs, since it is possible to utilize the neutral stress
pattern.

(78) Nu:ru ∅-m-tiɫangILile mwa:na náma
      'Nuru cut ͞the meat for the chi͞ld.'

In addition, both (79a) and (79b) are well-formed.

(79) a. Nu:ru ∅-m-tiɫangILile: náma mwa:na
          'Nuru cut ͞the ͞meat for th͞e child.'
      b. Nu:ru ∅-m-tiɫang͞ILile mwá:na nama
          'Nuru cut ͞the meat for the chi͞ld.'

The indirective applied verb behaves lik͞e the benefactive. Thus (80)
is pronounced with the neutral stress pattern.

(80) mwa:na ∅-m-tawañIɫIZe Aɫi ma:yi
      child SP OP͞ spilled-APPL water
      'The child spilled water on Ali.'

And both (81a) and (81b) are well-formed.

(81) a. mwa:na ∅-m-tawañIɫIZe má:yi Aɫi
          'The child ͞spilled water on Ali.'
      b. mwa:na ∅-m-tawañIɫI͞Ze Aɫi ma:yi
          'The child ͞spilled water on Ali.'

    Let us return, at this point, to (6͞1a) and (61b) -- which we
repeat below for the reader's convenience -- and look at these sentences
from the point of view of grammatical relations.

(61) a. Nu:ru ∅-tiɫanziɫe: nama ka: chisu
      b. chisu, Nu͞:ru ∅-tiɫang͞ILile: nama

In (61a) nama functions as ͞the principal ͞object of the berb. It can
control a͞n OP,

(82) Nu:ru ∅-i-tiɫanziɫe: nama ka: chisu
              SP OP͞

and can be passivized.

(83)   nama i-tiłanzila ka: chisu na Nu:ru
        meat SP̄ was cut with knife by
        'The meat was cut with a knife by Nuru.'
However, in (61b) nama no longer functions as the principal object of
the verb. One piece of evidence in support of this claim is the ob-
servation that the instrumental applied verb cannot have an OP in agree-
ment with nama.
(84)   *chīsu, Nu:ru ∅-i-tiłangILile: nama
A second piece of evidence that nama is not the principal object of the
instrumental applied verb comes from the fact that it cannot be passi-
vized.
(85)   *chisu, nama i-tiłangILila na Nu:ru
      We have given evidence that nama is not the principal object in
(61b). What about chisu? Has it assumed the role of principal object
(as we would expect, on the basis of comparison with the beneficiary
and indirect NP's)? The data provided by object agreement might lead
one to the conclusion that chisu is not the principal object, since
(86) is ungrammatical.
(86)   *chisu, Nu:ru ∅-sh-tiłangILile: nama
                    SP OP̄
That is, the instrumental applied verb may not agree with the instru-
ment chisu. No OP is possible in this particular example, since we
have already seen that nama cannot control the OP either. (But see
section 4.)
      While word order is generally a useful criterion for determining
what the principal object of a verb is, it is not very helpful in the
case of the instrumental applied verb. In section 2 we showed that the
principal object precedes the subsidiary object when the sentence is
pronounced with the neutral stress pattern. The problem, of course, is
that instrumental applied verbs cannot be pronounced with the neutral
stress pattern -- cf. (75).
      There is, however, one significant point in favor of considering
the instrument to be the principal object in (61b); namely, it can be
passivized.
(87)   chisu sh-tiłangILila: nama na Nu:ru
        knife SP̄ was cut-APPL meat by
        'The knife was used to cut the meat by Nuru.'
This ability of the instrument to be passivized would certainly seem to
count heavily in favor of considering the instrument to be the principal
object in an instrumental applied construction, given that the NP
displaced by the instrument in (61b), nama, has no object-like
characteristics at all. (But, again, see section 4.)
      It is perhaps of some interest to note that at least one native
speaker's reaction to a sentence like (87) is that this structure
'invites' an interpretation whereby the subject of the passive applied
verb, chisu, is understood as a beneficiary; but since it is impro-
bable that meat would be cut for the benefit of a knife, the sentence
is readily understood in an instrumental rather than a benefactive sense.
4.   Complications.
4.1. Object Agreement.
      The question of grammatical relations in instrumental applied verbal
constructions is not as simple as the discussion of (61b) above might in-

dicate. (61b) represents the typical situation when the NP that is
displaced by an instrument is inanimate. Some additional examples are
given below.

(88)   a. Ja:ma ɸ-funziłe mła:ngo ka xufułi
                SP closed door   with lock
            'Jama closed the door with a lock.'
       b. xufułi, Ja:ma ɸ-fungILile mła:ngo
            lock   SP locked-APPL
            'The lock, Jama closed the door with (it).'
       c. *xufułi, Ja:ma ɸ-u-fungILile mła:ngo
                        SP OP
       d. xufułi i-fungILila   mła:ngo na Ja:ma
            lock SP was closed-APPL door by
            'The lock was used to close the door by Jama.'
       e. *xufułi, mła:ngo u-fungILila   na Ja:ma
            lock   door   SP was closed-APPL by
            'The lock, the door was closed with (it).'

(89)   a. muke ɸ-pezełe: nt^{h}i ka lpe:ło
            woman SP swept floor with broom
            'The woman swept the floor with a broom.'
       b. lpe:ło, muke ɸ-pelEle: nt^{h}i
            broom   SP swept-APPL floor
            'The broom, the woman swept the floor with (it).'
       c. *lpe:ło, muke ɸ-i-pelEle: nt^{h}i
                        SP OP
       d. lpe:ło l-pelELa: nt^{h}i   na: muke
            broom SP was swept-APPL   floor by   woman
            'The broom was used to sweep the floor by the woman.'
       e. *lpe:ło, nt^{h}i i-pelELa   na: muke
            broom   floor SP was sweept-APPL by woman
            'The broom, the floor was swept with (it) by the woman.'

The (a) sentences above have a basic verb plus the preposition ka
in front of the instrument. The (b) sentences have the applied form of
the verb, with the instrument (not preceded by ka now) topicalized. The
(c) sentences show that the NP displaced by the instrument cannot control
an OP. The (d) sentences show that the instrument can be passivized,
while the (e) sentences show that the NP displaced by the instrument
cannot be passivized.

A somewhat different situation obtains when the NP displaced by
an instrument is animate. Such a NP continues to be able to govern
an OP on the applied verb. Consider the examples in (90).

(90)   a. Ali ɸ-m-durile Hamadi   'Ali pricked Hamadi.'
            SP OP pricked
       b. si:ndanu, Ali ɸ-m-durILile Hamadi
            needle   SP OP pricked-APPL
            'The needle, Ali pricked Hamadi with (it).'
       c. *si:ndanu, Ali ɸ-i-durILile Hamadi

In (90a) the basic verb has an OP agreeing with Hamadi. In (90b),
the verb is in the applied form, but the OP still is governed by Hamadi.
(90c) is ill-formed; that is, the applied verb may not have an OP
agreeing with the instrument, si:ndanu.

Additional examples, parallel to (90), are given in (91)-(92).

(91)   a. muke ∅-wa- ʼosheze   wa:na ·
            woman SP OP washed   children
            'The woman washed the children.'
        b. sa:buni, muke ∅-wa-ʼoshEɬEZe wa:na
            soap   woman SP OP washed-APPL children
            'The soap, the woman washed the children with (it).'
        c. *sa:buni, muke ∅-z-oshEɬEZe   wa:na

(92)   a. Haɬi:ma ∅-m-bishiɬe mwi:zi
                    SP OP hit thief ·
            'Halima hit the thief.'
        b. luti, Haɬi:ma ∅-m-bigILile mwi:zi
            stick   SP OP hit-APPL thief
            'The stick, Halima hit the thief with (it).'
        c. *luti, Haɬi:ma ∅-1-bigILile mwi:zi

The (a) sentences again give the verb in its basic form; the (b)
sentences reveal that the applied verb has an OP agreeing with the
human NP that the instrument displaces; the (c) sentences show that the
instrument cannot control an OP on the applied verb.

      We have claimed that the pattern illustrated in (90)-(92) is cha-
racteristic of animate nouns. So far, all the examples cited involve
Class 1/2 nouns. Class 1/2 nouns consist entirely of human nouns, but
there are human nouns that belong to other classes. Diminutives in Chi-
Mwi:ni are Class 7/8 nouns (recall that noun classes in Bantu languages
are typically paired, one class being singular, the other plural;
Class 7 nouns are singular, Class 8 are plural). The noun mwa:na
'child' has the diminutive form chija:na, while wa:na 'children'
has the diminutive form zija:na. Most commonly, a noun such as chija:na
governs an OP that has the shape appropriate to a Class 1 noun -- name-
ly, -m-; it is, however, possible to use the OP -chi-, the shape that
a Class 7 noun would be expected to require. In either case, if chija:na
is displaced by an instrument, it still governs the OP.

(93)   si:ndanu, Aɬi ∅- {ᵐchi}-durILile   chija:na
        needle   SP OP   pricked-APPL child
        'The needle, Ali pricked the child with (it).'

      Animals generally belong to Class 9/10 (these two classes have the
same SP in both the singular and plural, either -n-, which assimilates
the point of articulation of a following stop, or ∅). A Class 9/10
noun referring to an animal ---- mbwa 'dog'/'dogs', for instance --
exhibits a peculiar agreement pattern, different from inanimate Class
9/10 nouns. mbwa 'dog' requires the OP -m-, which is the OP that a Class
1 (human) noun requires. mbwa 'dogs', on the other hand, most fre-
quently occurs with the -zi- OP, which is the one that a Class 10 noun
generally requires. However, the -wa- OP can also be used; -wa- is the
OP typically limited to Class 2 nouns.

      When a noun such as mbwa (singular or plural) is displaced by an
instrument, it still controls the OP.

(94)   si:ndanu, Aɬi ∅-{ᶻⁱwa}-durILile: mbwa
        needle   SP OP   pricked-APPL dogs
        'The needle, Ali pricked the dogs with (it).'

      To summarize, an animate noun that is displaced by an instrument
retains a certain object-like character in that it controls an OP on the

instrumental applied verb. The instrument does not have this ability.

4.2. Passivization.

The natural question to ask, at this point, is: what about passivization? when the noun displaced by an instrument is animate, is it the instrument that passivizes -- or the displaced NP? Let us consider, first of all, displced human nouns belonging to Class 1/2.

(95)   a. luti l-bigILila   mwi:zi na Hali:ma
             stick SP was hit-APPL thief by
             'The stick was used to hit the thief by Halima.'

        b. ?luti, mwi:zi φ-bigILila   na Hali:ma
             stick thief   SP was hit-APPL
             'The stick, the thief was hit with (it) by Halima.'

        c. luti φ-bigILila   mwi:zi na Hali:ma
             stick SP was hit-APPL thief by

In (95a) it can clearly be seen that the instrument can passivize even when the noun displaced by the instrument is human. (95b), while of doubtful grammaticality, is a much better sentence than the (e) sentences in (88)-(89), for example. (95c) is a perfectly well-formed sentence. Note that in both (95b) and (95c) the displaced NP, mwi:zi, has been passivized and controls the SP on the passive applied verb. The only difference between the marginal sentence (95b) and the fully grammatical (95c) is word order. In (95b) mwi:zi is located in pre-verbal position, whereas in (95c) it occupies the position immediately after the verb (which, incidentally, is not an uncommon position in Chi-Mwi:ni for a subject to occupy when it is not the topic of the sentence).

Some additional examples parallel to (95):

(96)   a. sa:buni z-oshEbEZa   wa:na na: muke
             soap SP was washed-APPL children by woman
             'The soap was used to wash the children by the woman.'

        b. ?sa:buni, wa:na wa-'oshEbEZa   na: muke
             soap   children SP was washed-APPL by woman
             'The soap, the children were washed with (it) by the woman.'

        c. sa:buni wa-'oshEbEZa   wa:na na:muke
             soap   SP was washed-APPL children by woman

(97)   a. si:ndanu i-durILila   Hamadi na Ali
             needle SP was pricked-APPL   by
             'The needle was used to prick Hamadi by Ali.'

        b. ?si:ndanu, Hamadi φ-durILila   na Ali
             needle   SP was pricked-APPL by
             'The needle, Hamadi was pricked with (it) by Ali.'

        c. si:ndanu φ-durILila   Hamadi na Ali
             needle SP was pricked-APPL   by

The (a) sentences demonstrate that the instrument can be passivized; the (b) and (c) sentences show that a human displaced by an instrument can also be passivized, though the sentence that results is fully grammatical only if the subject is in post-verbal position. It should be emphasized that the instrument in the (c) sentences must be topicalized in order for the sentence to be well-formed.

It was shown in section 3.3 that inanimates displaced by an instrument cannot be passivized. This is true regardless of word order. Consider (98).

(98)   a. chiguwo sh-pangulILa   sabu:ra na mwa:limu
              rag   SP was wiped-APPL blackboard by teacher
              'The rag was used to wipe the blackboard by the teacher.'
        b. *chiguwo,   sabu:ra   i-pangulILa   na mwa:limu
              rag blackboard   AP was wiped-APPL by teacher
              'The rag, the blackboard was wiped with (it) by the teacher.'
   : c. *chiguwo i-pangulILa   sabu:ra na mwa:limu ibid.
              rag   SP was wiped-APPL blackboard by teacher

The instrument can be passivized (cf. (98a)), but the inanimate noun
that it displaces cannot be, no matter how it is positioned: before the
verb (as in (98b)) or after the verb (as in (98c)).

    We have seen so far that human nouns -- of Class 1/2 -- can be
passivized. Not all human nouns behave in this fashion, however. Consi-
der (99).

(99)   a. luti l-bigILila   chija:na na Hali:ma
              stick SP was hit-APPL child by
              'The stick was used to hit the child by Halima.'
        b. luti ∅-bigILila   chija:na na Hali:ma
              stick SP was hit-APPL child by
              'The stick, the child was hit with (it) by Halima.'
        c. *luti chi-bigILila   chija:na na Hali:ma
              stick SP was hit-APPL child by

Recall that a noun like chija:na, which can be identified as a Class 7
noun, shows ambiguous behavior with respect to the OP. It can either control
the OP -m-, like a Class 1 (human) noun, or the OP -chi-, like a Class
7 noun. chija:na behaves similarly with respect to the SP. That is,
it commonly can occur with a ∅ SP, like a Class 1 noun, but may also
occur with the -chi- SP, like a Class 7 noun. Note now that (99b) is
well-formed, but (99c) is not. In (99b) chija:na controls the ∅ SP,
while in (99c) it controls the -chi- SP. Thus chija:na can be passivized
just in case it is being treated as a Class 1 noun. When it behaves
like a Class 7 noun, as in (99c), passivization is disallowed.   :·

    The evidence provided by chija:na suggests that only nouns that be-
have parallel to Class 1/2 nouns (with respect to the SP or OP they
govern) are capable of being passivized when displaced by an instrument.
Further evidence in favor of this view is provided by Class 9/10 nouns
referring to animals. Recall that a noun such as mbwa requires the -m-
OP, just like a Class 1 noun, when functioning as a singular noun. It
also requires the same SP as a Class 1 noun -- namely, ∅. When mbwa
functions as a plural, however, it generally requires the OP -zi-, charac-
teristic of Class 10 nouns. It also requires the -zi- SP, again charac-
teristic of a Class 10 noun. Now, note the data in (100) and (101).

(100)   a. luti l-bigILila: mbwa na Hali:ma
              stick SP was hit-APPL dog by
              'The stick was used to hit the dog by Halima.'
        b. luti ∅-bigILila: mbwa na Hali:ma
              stick SP was hit-APPL dog by
              'The stick, the dog was hit with (it) by Halima.'
(101)   a. luti l-bigILila: mbwa na Hali:ma
              stick SP was hit-APPL dog by
              'The stick was used to hit the dogs by Halima.'

b: *ʉ́ʉ́ti zi-bígILila: mbwa na Hali:ma
    stick SP was hit-APPL dogs by
    'The stick, the dogs were hit with (it) by Halima.'

(100b) is well-formed, where <u>mbwa</u> 'dog'is passivized; (101b) is ill-
formed, where <u>mbwa</u> 'dogs' is <u>passivized</u>. The differnce would seem to be
a consequence of the fact that <u>mbwa</u> 'dog' requires the SP appropriate
to Class 1 nouns, while <u>mbwa</u> 'dogs' requires the SP appropriate to Class
10 nouns.

    It is only Class 1/2 nouns displaced by an instrument that are
susceptible to passivization. NP's displaced by a beneficiary or an
indirect NP cannot be passivized, regardless of word order. Consider
benefactive constructions first. Given a sentence like (102),

(102)   Ja:ma ∅-m-someshEbEZe Nu:ru wa:na
        SP OP taught-APPL children
        'Jama taught the children for Nuru.'

it is possible to passivize the beneficiary; thus (103) is well-formed.

(103)   Nu:ru ∅-someshEbEZa   wa:na na Ja:ma
        SP was taught-APPL children by
        'Nuru had the children taught (for him) by Jama.'

If <u>wa:na</u> controlsthe SP rather than <u>Nu:ru</u>, as in (104) below, a gramma-
tical sentence results -- but <u>wa:na</u> is now interpreted as the beneficiary.

(104)   wa:na wa-someshEbEZa   Nu:ra na Ja:ma
        children SP were taught-APPL
        'The children had Nuru taught (for them) by Jama.'

Thus (104) cannot be regarded as a passive variant of (102), but rather of
(105).

(105)   Jama ∅-wa-someshEbEZe wa:na Nu:ru
        SP OP taught-APPL children
        'Jama taught Nuru for the children.'

No manipulation of the word order of (104) will result in a sentence
where <u>wa:na</u>,isunderstood as the displaced NP rather than the beneficiary.
In particular, (106) -- which superficially looks similar to (95c) -- can-
not be so interpreted.

(106)   ?Nu:ru wa-someshEbEZa   wa:na na Ja:ma
        SP was taught-APPL children by
        'Nuru, the children had him taught (for them) by Jama.'

(106) is of doubtful grammaticality; but in any case it cannot be un-
derstood as a passive variant of (102). <u>wa:na</u> in (106) can only be
interpreted as the beneficiary.

    Turning to indirective applied constructions, we find again that
a Class 1/2 human displaced by an indirect NP cannot be passivized.
A sentence such as (107),

(107)   Ali ∅-m-tumILilea Nu:ru wa:na
        SP OP sent-APPL   children
        'Ali sent the children to (get) Nuru.'

allows the indirect NP to be passivized.

(108)   Nu:ru ∅-tumILila   wa:na na Ali
        SP was sent-APPL children by
        (No close English equivalent exists. (108) means the same thing
        as (107).)

If <u>wa:na</u> controls the SP rather than <u>Nu:ru</u>, as in (109), a grammatical
sentence results -- but now <u>wa:na</u> is interpreted as the indirect NP.

(109)   wa:na   wa-tumILila   Nu:ru na Ali
         children SP were sent-APPL   by
In (109) Nu:ru is being sent to wa:na, whereas in (107) it is the opposite.
Thus (109) cannot be viewed as a passive variant of (107), but rather of
(110).
(110)   Ali ∅-wa-tumILile   wa:na Nu:ru
             SP OP sent-APPL children
         'Ali sent Nuru to the children (to get them).'
Again, no manipulation of the word order will convert (109) into a
sentence that can be interpreted analogously to (107). (111) is of
doubtful grammaticality, but in any case it can only be interpreted as
meaning that wa:na is the indirect NP.
(111)   ?Nu:ru wa-tumILila   wa:na   na Ali
              SP was sent-APPL children   by
Thus (111) is not a passive variant of (107).

4.3 Passivization Again.
    There is yet another situation which allows a displaced Class
1/2 noun to be passivized in an instrumental applied construction.
Examine the data in (112).
(112)   a. li:kopi luti · la Hali:ma ∅-m-bigILile mwi:zí
             where is stick RM   SP OP hit APPL thief
             'Where is the stick that Halima used to hit the thief?'
         b. li:kopi luti l-bigILila   mwi:zí
             where is stick SP was hit-APPL thief
             'Where is the stick that was used to hit the thief?'
         c. li:kopi luti la mwi:zi ∅-bigILi:lá
             where is stick RM thief   SP was hit-APPL
             'Where is the stick that the thief was hit with?'
In each of the examples in (112) luti is the head noun of a relative
construction. Relative clauses follow the head noun in Chi-Mwi:ni and
are introduced by a relative marker (RM), except that the RM is absent
when the head noun is immediately followed by the main verb of the
relative clause (this occurs most commonly when the subject of the relative
clause is deleted under identity with the head noun). In (112a) the
RM la occurs between the head noun, luti, and the subject of the rela-
tive clause, Hali:ma. In (112b), on the other hand, the instrument in
the relative clause has been passivized into subject position (and hence
controls the SP on the relative verb) and deleted under identity with
the head noun. Hence no RM occurs in (112b).
    The most interesting sentence is (112c), where it will be noted that
the head noun luti is again followed by the RM la. This time the subject
of the relative clause is mwi:zi 'thief' (as can be seen by the ∅ form of
the SP on the relative verb). mwi:zi has gotten into subject position
via passivization. (112) shows that when the verb is in the instrumental
applied form, two different NP's can passivize: the instrument (as in
(112b)) and the Class 1/2 noun displaced by the instrument (as in
(112c)).
    An inanimate NP displaced by an instrument cannot be passivized
in circumstances similar to (112c). Note (113).

(113) a. li:kopi lpeɫo la: muke ɸ-pelELo: ntʰí'
      where is broom RM woman SP swept-APPL floor
      'Where is the broom that the woman used to sweep the floor.'
   b. li:kopi lpeɫo l-pelELa: ntʰí
      where is broom SP was swept-APPL floor
      'Where is the broom that was used to sweep the floor by the woman?'
   c. *li:kopi lpeɫo la: ntʰí i-pelE:lá
      where is broom RM floor SP was swept-APPL
      'Where is the broom that the floor was swept with by the woman?'

Animate nouns that govern the same agreement prefixes as Class 1/2 nouns may be passivized. Thus mbwa 'dog' can passivize, but mbwa 'dogs' cannot. Contrast (114a) with (1114b).

(114) a. li:kopi luti la: mbwa ɸ-bigILi:lá
      where is stick RM dog SP was hit-APPL
      'Where is the stick that the dog was beaten with?'
   b. *li:kopi luti la: mbwa zi-bigILi:lá
      where is stick RM dogs SP were hit-APPL
      'Where is the stick that the dogs were hit with?'

It must be emphasized, again, that it is only Class 1/2 nouns displaced by an instrument that exhibit the behavior of (112c). A Class 1/2 noun displaced by a beneficiary cannot be similarly passivized.

(115) a. ukopi muntʰu wa mwa:limu ɸ-m- someshEᶀEZo wa:ná
      where is man RM teacher SP OP taught-APPL children
      'Where is the man who the teacher taught the children (for him)?'
   b. ukopi muntʰu ɸ-someshEᶀEZa wa:ná
      where is man SP was taught-APPL children
      'Where is the man who had the children taught (for him).'
   c. ≠?ukopi muntʰu wa wa:na wa-someshELE:zá
      where is man RM children SP were taught-APPL
      'Where is the man who the children had taught (for them)?'

In (115b) the beneficiary in the relative clause is passivized into subject position and then deleted under identity with the head noun. Whether or not (115c) is a well-formed sentence, it cannot be considered a passive variant of (115a). (115c) can only be interpreted as specifying wa:na as a beneficiary, whereas in (115a) wa:na can only be interpreted as the displaced NP.

Similar observations hold for indirective applied verbs. A Class 1/2 noun displaced by an indirect NP cannot be passivized in a situation parallel to (112c).

(116) a. ukopi muntʰu wa Aɫi ɸ-m-tumILilo wa:ná
      where is man RM SP OP sent-APPL children
      'Where is the man whom Ali sent the children to?'
   b. ukopi muntʰu ɸ-tumILila wa:ná
      where is man SP was sent-APPL children
   c. ≠? ukopi muntʰu wa wa:na wa-tumIli:lá
      where is man RM children SP were sent-APPL

In (116b) the indirect NP in the relative clause is passivized into subject position and then deleted under identity with the head noun muntʰu 'man'. (116c) is of uncertain grammaticality, but in any case it cannot be interpreted as a passive variant of (116a). In (116c) wa:na must be

interpreted as the NP displaced by the indirect NP.

4.4. Instruments Co-occurring with Beneficiaries and Indirect NP's
      We have not as yet exhausted the complications that the instrumental
applied construction causes for a systematic account of grammatical re-
lations in Chi-Mwi:ni. To get at the additional complexities, consider
the following problem: suppose that one wishes to include, in a single
clause, both a beneficiary and an instrument; or both an indirect NP and an
instrument; or a beneficiary and an indirect NP. How is this done?
We will begin to answer this question by examining (117).
(117)   muke ø-wa-fulILe   wa:na nguwo   ka sa:buni
         woman SP washed-APPL children clothes with soap
         'The woman washed clothes for the children with soap.'
Note that the verb in (117) is in the applied form, with the beneficiary
wa:na located immediately after the verb, and the displaced NP nguwo
following the beneficiary. The instrumental phrase ka sa:buni 'with soap'
follows the displaced NP. This represents the normal word order.
      The preposition ka is obligatory in (117). If it is omitted, the
resulting sentence is ill-formed.
(118)   *muke ø-wa-fulILe   wa:na   nguwo sa:buni
         woman SP OP washed-APPL children clothes soap
Thus in (117) wa:na is unequivocally the principal object of the verb.
Not only does it control the OP in (117) and immediately follow the verb,
but it also can be passivized.
(119)   wa:na   wa-fulILa: nguwo ka sa:buni na: muke
         children SP were washed-APPL clothes with soap by woman
         'The children had their clothes washed (for them) by the woman.'
The instrument, being preceded by a preposition in (117), is clearly not
the principal object.
      Nevertheless, the following sentence is well-formed.
(120)   sa:buni s-fulILa   wa:na hguwo   na: muke
         soap   SP was washed-APPL children clothes by woman
         'The soap was used to wash the clothes for the children by the wo-
         man.'
In other words, the instrument sa:buni can occur in an unmarked form if
it is passivized. In (120) we have two different NP's dependent on the
applied verb (that is, occurring in the sentence in an unmarked form
by virtue of the presence of an applied verb): wa:na, the beneficiary,
and sa:buni, the instrument. The explanation for why sa:buni must occur
in a marked form in (118) but occurs in an unmarked form in (120) would
appear to involve the observation made in 3.3 -- namely, the instrumental
applied verb is used when the instrument is not asserted, but rather is
presupposed or the 'topic' of the sentence.
      It is, therefore, not just a passive structure like (120) that permits
the instrument to occur in an unmarked form. Topiclization of the instru-
ment also allows the instrument to occur without a preposition.
(121)   sa:buni, muke ø-wa-fulILe   wa:na nguwo
         soap woman   SP OP washed-APPL children clothes
         'The soap, the woman washed clothes for the children with (it).'
It is only topicalization of the instrument that allows the instrument
to be unmarked. In (122a) the beneficiary is topicalized, and in (112b)
the NP displaced by the beneficiary is topicalized; in neither case can

the preposition <u>ka</u> be omi/.ted.

(122)   a. wa:na,   muke ∅-wa-fulILe: nguwo   ka sa:buni
               children woman SP OP washed-APPL clothes with soap
        b. nguwo,   muke ∅-wa-fulILe   wa:na   ka sa:buni
               clothes woman SP OP washed-APPL children with soap

Relativization provides a third context in which the instrument can be grammatically dependent on an applied verb which also has a beneficiary dependent on it. We have already pointed out that unmarked NP's are simply deleted under identity with the head noun of a relative clause. A NP preceded by a preposition, in most cases, is replaced by a pronominal form if it is identical to the head noun of a relative clause. There is an exception to this practice, however. An instrument preceded by <u>ka</u> cannot be relativized at all. (123) is ungramatical.

(123)   *chisu cha Nu:ru ∅-tiłanziło: nama ka: chć. . .
          knife   RM   SP   cut   meat with it
          'The knife that Nuru cut the meat with . . .'

To obtain a well-formed relative clause, one must use the applied verb.

(124)   chisu cha Nu:ru ∅-tiłangILilo: namá. . .
          knife   RM   AP cut-APPL   meat
          'The knife that Nuru cut the meat with. . .'

In (124), the instrument in the relative clause has been deleted under identity with the head noun. This deletion ispossible because the instrument in the relative clause is unmarked, being grammatically dependent on the applied verb.

With the above facts in mind, examine (125).

(125)   sabuni   za: muke ∅-wa-fulILo   wa:na   nguwó. . .
          soap   RM woman SP OP washed-APPL children clothes
          'The soap that the woman washed the clothes for the children with. . '

A sentence such as (125) arises from the deletion of the instrument in the relative clause under identity with the head noun of the relative clause; but this deletion is possible only if the instrument is in its unmarked form. Thus the instrument in (125) must be grammatically dependent upon the applied verb. The beneficiary, however, is also grammatically dependent on the same verb.

If either the beneficiary or the NP displaced by the beneficiary are deleted under identity with a head noun, the instrument must be preceded by the preposition. Thus (126a) and (126b) would both be ungrammatical if <u>ka</u> were omitted.

(126)   a. wana wa:muke ∅-wa-fulILo: nguwo ka sa:buní. . .
               children RM woman SP OP washed-APPL clothes with soap
               'The children who the woman washed clothes (for them) with soap. . .'
        b. nguwo   za: muke ∅-wa-fulILo   wa:na   ka sa:buní . . .
               clothes RM woman SP OP washed-APPL children with soap
               'The clothes that the woman washed for the children with soap. .'

So far in this section we have considered only sentences where an instrument occurs in the same clause as a beneficiary. Let us turn now to the case where an instrument occurs in the same clause as an indirect NP.

(127)   Ałi ∅-m-łetELele Nu:ru skuñi   ka chiga:ri
              SP-OP brought-APPL   firewood with cart
          'Ali brought firewood to Nuru with a cart.'

Note that the indirect NP, Nu:ru, governs the OP on the applied verb and
immediately follows the verb. skuñi, the NP displaced by Nu:ru, occurs
next, and then the ka-instrumental phrase. The indirect NP in (127)
can be passivized, further establishing that it functions as the principal
object of the verb.

(128)] Nu:ru ∅-łetELela skuñi ka chiga:ri na Ałi
        SP was brought-APPL firewood with cart by
    'Nuru was brought firewood with a cart by Ali.'

Although the ka cannot be omitted from (127), it is still possible to
passivize chiga:ri.

(129) chiga:ri chi-łetELela Nu:ru skuñi na Ali
      cart SP was brought-APPL ·
    'The cart was used to bring Nuru firewood by Ali.'

In other words, if the instrument is the topic (as a subject generally is),
then it occurs in its unmarked form. The instrument can occur in an
unmarked form only if it is grammatically dependent on an applied verb.
Thus the applied verb in (129) has two NP's dependent upon it: Nu:ru,
the indirect NP, and chiga:ri, the instrument.

The instrument can also be topicalized in its unmarked form.

(130) chiga:ri, Ali ∅-m-łetELele Nu:ru skuñi
      cart SP OP brought-APPL firewood
    'The cart, Ali brought firewood to Nuru with (it).'

The instrument cannot be in its unmarked form if the indirect NP is
topiclized or if the NP displaced by the indirect NP is topicalized.
ka cannot be omitted in either (131a) or (131b).

(131) a. Nu:ru, Ali ∅-m-łetELele skuñi ka chiga:ri
            SP OP brought-APPL firewood with cart
    b. Skuñi, Ali ∅-m-łetELele Nu:ru ka chiga:ri
            SP OP brought-APPL with cart

The instrument may be deleted under identity with a head noun
in a relative construction, which is possible only if it is in its unmarked
form and dependent upon an applied verb.

(132) chigari cha Ali ∅-m-łetELelo Nu:ru skuñi . . .
      cart RM SP OP brought-APPL firewood
    'The cart that Ali brought the firewood to Nuru with . . .

The above data show that both an instrument and an indirect NP
can be dependent on an applied verb at the same time. While only the
indirect NP can govern an OP on the verb, both the indirect NP and the
instrument can be passivized.

We have seen that a beneficiary and an instrument or an indirect NP and
an instrument may both be simultaneously linked to an applied verb.
Thus both may exhibit at least one property of a principal object -- namely,
the ability to passivize. A NP that is dependent on an applied verb
always has this property (as the examples throughout this paper have
shown). Consider now the co-occurrence of a beneficiary and an indi-
rect NP in the same clause.

(133) Hamadi ∅-mw-andikILile mwa:na xati ka A:sha
      SP OP wrote-APPL child letter to
    'Hamadi wrote a letter for the child to Asha.'

mwa:na is the beneficiary in (133): it governs the OP and follows im-
mediately after the verb. xati is the NP displaced by the beneficiary
and follows the beneficiary in the normal word order. The ka-indirective

phrase comes last.

It is not possible to omit the ka from (133).

(134)   * Hamadi ∅-mw-andikILile   mwa:na xati A:sha

The indirect NP cannot occur unmarked in a pssive construction either, unlike the instrument.

(135)   * A:sha ∅-andikILila   mwa:na xati na Hamadi
            SP was written-APPL child letter

Only the beneficiary may be passivized; and when it is passivized, the indirect NP must still be preceded by a preposition.

(136)   mwa:na ∅-andikILila: xati   ka A:sha na Hamadi
            child SP was written-APPL letter to   by
            'The child had a letter written for (him) to Asha by Hamadi.'

Similarly, one cannot topicalize the indirect NP in its unmarked form when a beneficiary occurs in the same clause. (137) is ill-formed.

(137)   *A:sha, Hamadi ∅-mw-andikILile mwa:na xati
                        SP OP wrote-APPL child   letter
            'Asha, Hamadi wrote a letter to her for the child.'

Finally, the indirect NP cannot be deleted under identity with the head noun of a relative construction. (138) is ill-formed.

(138)   * muke wa Hamadi ∅-mw-andikILilo   mwa:na   xati. . .
            woman RM   SP OP wrote-APPL   child   letter
            'The woman who Hamadi wrote a letter to for the child. . .'

To obtain a well-formed relative clause analogous to (138), one must have the preposition ka plus a pronominal form.

(139)   muke wa Hamadi ∅-mw-andikILilo mwa:na xati ka: ké. . .
            woman RM   SP OP wrote-APPL child   letter to her
            'The woman who Hamadi wrote a letter to her for the child. . .'

The main thrust of the examples in this section, then, is that although an applied verb cannot have two NP's grammatically dependent on it (i.e. occurring in an unmarked form by virtue of the verb being an applied verb) if the NP's are a beneficiary and an indirect NP, such a double dependency is possible if one of the NP's is an instrument and the other either a beneficiary or an indirect NP. When a NP is dependent on an applied , it has the ability to passivize -- and thus has one of the essential characteristics of the principal object. Consequently, when two NP's are dependent on an applied verb, there are two NP's that have a characteristic feature of the principal object.

5. Conclusions.

The evidence from Chi-Mwi:ni suggests that although a certain cluster of grammatical properties (e.g. agreement, word order, susceptibility to passivization) may in general be associated with a particular grammatical relationship (e.g. the principal object of the verb in Bantu languages), the correlation may not be perfect. We have seen, for instance, that a NP may have one of the relevant characteristics without necessarily having the others; thus an instrument in Chi-Mwi:ni can passivize, but does not control an OP on the verb. Furthermore, whereas in general only one NP in Chi-Mwi:ni can be the principal object of the verb, we find that in a variety of cases -- all involving instruments - two different NP's may exhibit characteristics of the principal object.

Perhaps the most striking aspect of the data discussed in this paper

is the extent to which semantic (e.g. an instrument as opposed to a beneficiary or an indirect NP) and morphological (e.g. Class 1/2 nouns as opposed to other noun classes) factors determine how a particular NP will be related to a verb. The grammatical relationships exhibited in Chi-Mwi:ni sentences cannot be characterized except through constant reference to these factors.

Footnotes

1. Chi-Mwi:ni has generally been treated as a dialect of Swahili, but there are extensive differences at the morphophonemic, morphological, and lexical levels. We prefer to regard Chi-Mwi:ni as a separate language, though closely related. There are important syntactic differences (for example, in the structure of relative clauses) between Chi-Mwi:ni and Swahili, but the full extent of these differences has not yet been determined. The only published works on Chi-Mwi:ni, prior to our own investigation (which is still in progress), are two short articles: Whiteley (1965) and Goodman (1967). The latter writer refers to the language as Bravanese. A small part of the material that we have collected on the language appears in Kisseberth and Abasheikh (1974a, b, c, d).

2. Since the present paper is concerned exclusively with aspects of Chi-Mwi:ni syntax, we have provided no discussion of the transcription system utilized and no explanation of the various morphophonemic alternations that can be observed in the data cited. The interested reader should consult our papers cited in the first footnote.

3. In the course of this paper we will cite many examples where an OP occurs on the verb. The reason for this is that we are concerned here with grammatical relations, and the ability to govern an OP on the verb is a characteristic feature of the (principal) object in Chi-Mwi:ni and other Bantu languages. The reader should be warned, however, that an OP is not as commonly used with inanimate objects as the text might suggest. An OP is generally present when a human functions as object, but generally not when an inanimate functions as object.

4. Cf. Doke (1938), p. 418.

5. Many of the passive sentences cited in the text have no word-for-word equivalent in English. In such cases we have attempted to construct an English sentence that conveys as far as possible the essential grammatical relationships observable in the Chi-Mwi:ni example.

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DATIVE SUBJECTS, RULE GOVERNMENT, AND RELATIONAL GRAMMAR

S.N. Sridhar

1.0. INTRODUCTION[1]. The focus of this paper is a construction which has
been considered to be one of the defining features of South Asia as a
linguistic area (Masica 1976). In this construction, the NP perceived
as subject -- the so-called 'logical subject'-- appears with a dative case
marking and occupies the usual subject position, while another NP, in the
nominative, controls verb agreement (1):

1. avanige   tāyiya   jnāpaka   bantu.
   he -dat.   mother's   remembrance (neut.)   came (neut.)
   He remembered his mother.

Diachronic questions such as how, when, and why the languages of the area
came to have this construction in common are no doubt highly interesting
and important, but I shall pass them up here. Rather, the concern of the
present study will be the synchronic one of the problems involved in pro-
viding an adequate account of the syntax and semantics of the construction
in the grammars of the languages in question, and of the implications of
such an account for a theory of relationally-based grammar. As we shall
see, a detailed examination of this construction involves several con-
troversial issues in current linguistic theory, such as the role of gram-
matical relations in the formulation of syntactic rules (Perlmutter and
Postal 1974, Johnson 1974), the status of basic grammatical relations
such as 'subject of' -- in particular, the controversy regarding their
'discrete' versus 'squishy' status (Keenan 1976, Johnson to appear)), the
relation between the relation-changing property of a rule and the
probability of its being 'governed' (Johnson 1974), the organization
of a relationally-based grammar -- in particular, the ordering of relation
changing rules with respect to anaphoric reference and deletion rules,
among others. It will be argued here that the most plausible analysis of
the construction in question involves a derivational approach, which is
consistent with the view of grammatical relations as discrete entities.
    Before proceeding further, a caveat is in order. Although, as mentioned
above, the dative subject construction (or DSC; hereafter) is a pan-South
Asian feature[2], no claim is made that the facts and analyses presented
in this paper apply to all the languages of South Asia. Both because the
number of languages involved is quite unwieldy, and in order to keep the
exposition reasonably clear, the following discussion will be in terms of
my mother tongue, Kannada, a major Dravidian language of South India.
However, it appears that DSC in Kannada is representative of the con-
struction in South Asian languages in general in many important respects.

2.0. THE SEMANTICS OF THE DSC. Unlike some other languages which seem
to have a similar construction, the DSC in South Asian languages in general,
and in Kannada in particular, is not restricted to expressions of posses-
sion and of physical states, but enjoys an extremely wide range of distribu-

tion, which makes it one of the most frequently used constructions in these languages. In Kannada, it is employed with predicates expressing knowledge, doubt, judgement, belief, perception, liking, disliking, wanting, need, necessity, obligation, ability, physical and mental attributes and dispositions, transient physical states as well as inherent and inalienable properties, kinship and other kinds of relationship, and, of course, possession. It must be emphasized that on the one hand, the above list in no way exhausts all the possibilities, and on the other, each of the meaning classes of predicates just mentioned has a large membership of individual lexical items. I have given below a few examples to illustrate the versatility of the construction, an indefinitely large number may be easily constructed:

2. maguvige bāyārike āgide.
    child -d. thirst has happened
    The child is thirsty.
3. nanage nagu   baratte.
    I -d. laughter   comes
    I feel like laughing.
4. avaḷige ibbaru makkaḷu   iddāre.
    she -d. two   children are
    She has two children.
5. nanage idu   ishṭa   illa.
    I -d. this liking   neg.
    I don't like this.
6. manushyanige naḍate   irabēku.
    man -d.   character   to be-must
    A man should have (good) character.
7. ninage ī   vicāra   gottā?
    you -d. this matter   known-Q
    Do you know this?
8. nanage   jarman   baratte.
    I -d.   German   comes
    I can speak German.
9. avanige viparīta   kobbu.
    he -d. too much   arrogance
    He is too arrogant.
10. bekkige cūpāda uguru iratte.
    cat -d. sharp nail is
    Cats have sharp claws.

As wide as the distribution of the DSC is, it cannot be used randomly to express any given meaning. For example, the (a) (or dative) counterparts of the nominative subject sentences (11) and (12) are ungrammatical:

11. avanu nija   hēḷda.
    he(nom) truth   told(masc.)
    He told the truth.
11a* avanige nija hēḷtu.
    he -d. truth told(neut.)

```
12.        avanu          padya ōdida.
           he(nom)        poem  read(masc)
           He read a poem.
12a*    avanige padya  ōditu.
           he -d.  poem   read(neut)
```

Clearly, then, the DSC is a governed phenomenon. However, it will
not do to characterize the construction as being governed by the semantic
classes of predicates mentioned earlier, for the following reason: although
some predicates such as bēku 'want', gottu 'is known' obligatorily take
a 'dative subject', most of the predicates employed in the DSC appear in
nominative subject constructions as well, as in (13)-(14):

```
13.        avanige jvara bantu.
           he -d.  fever came
           He got a fever.
13a.    avanu jvara (-vannu)     barisikonḍa.
           he(nom) fever (-acc)  cause-come-past
           He got a fever.

14.        avanige ī   suddi tiḷiyitu.
           he -d.  this news ' became known
           He came to know this news.
14a.    avanu   ī    suddi (-yannu)  tiḷidukonḍanu.
           he(nom) this news  (-acc)       learnt
           He learnt this news.
```

The difference between (13) and (13a), and (14) and (14a) lies primarily
in the role of the dative as opposed to the nominative NP in relation to
the action denoted by the verb: in (13) and (14), the dative NP is an
experiencer or recipient, while the nominative NP in (13a) and (14a)
is a volitional agent. Thus it is possible to insert a volitional ad-
verbial such as bekūnta 'deliberately' in (13a) but not in (13), or
kashṭapaṭṭu 'with effort' in (14a) but not in (14). This distinction
is clearly brought out in the ungrammaticality of (15), below, where an
inherently volitional act such as suicide is incompatible with an exper-
iencer subject, and requires a volitional agent, as in (15a):

```
15*     avanige ātmahatye āyitu.
           he -d.  suicide   happened
15a.    avanu ātmahatye māḍikonḍanu.
           he(nom) suicide   committed.
           He committed suicide.
```

Together with the perception of the subject as a non-volitional exper-
iencer/recipient as against a volitional agent, another distinction be-
tween the DSC and its nominative subject counterpart consists of the
nature of the verbs that occur in the two constructions. The verbs that
occur in the DSC are all either statives or "en-statives" ('entering into
a state', cf. Krishnamurti 1975), while the verbs that occur in the nomi-
native subject sentences may be stative, "en-stative" or active.

To sum up the discussion of the semantics of the DSC, it seems plausible to claim that the DSC is governed by the feature (+stative) on the predicates belonging to the semantic classes outlined earlier, with the subject being conceived of (pragmatically?) as a non-volitional experiencer or recipient rather than as a volitional agent.

3.0. THE SYNTACTIC PROPERTIES OF THE DSC. In this section, I shall examine the syntactic properties of the DSC (both surface and 'deep'), especially with a view to seeing whether there are any independently motivated syntactic grounds to substantiate the native speakers' perception of the dative NP as the subject in the DSC. For this purpose, I shall follow the hueristic suggested in Keenan (1976) of first isolating the properties that characterize the subject NPs in basic (non-transformed) intransitive and transitive sentences in the language, and then applying these tests to determine the subject-status of the NP in question. Following Keenan, I shall divide the syntactic properties into (i) coding properties (or overt formal properties, such as characteristic position, case marking, control of verb agreement, etc.) and (ii) behavioral properties (or characteristic behavior of the NP in question with respect to certain transformations that make crucial reference to the notion 'subject of' in the language).

3.1. Coding properties: It is well-known that subjects in Kannada have the following surface properties. They take the nominative (or $\emptyset$) case marking; they control verb agreement in number, gender, and person; and they occupy the sentence-initial position in sentences with stylistically unmarked word order. (Kannada is an SOV language of the nominative-accusative type, cf. Sridhar 1975 for further details).

The dative NP in the DSC, as noted earlier (section 1), does not govern verb agreement -- agreement is with the nominative NP -- and, of course, it is not in the nominative. This leaves us with the third test, word order, and the dative NP in the DSC does very well on that. It normally occupies the sentence-initial position, and although word order is not an infallible indicator of subjecthood in Kannada, I believe there is something to be said for the stubbornness with which the dative NP occupies the subject position in the language.

3.2. Behavioral Properties: In this section, I shall discuss the transformational behavior of the dative and the nominative NPs with respect to certain rules that make crucial reference to the notion 'subject of' in Kannada. The relevant rules are (i) Reflexivization, (ii) Coreferential Subject Deletion, (iii) Causativization, and (iv) Equi NP Deletion. With respect to each rule, I shall first briefly outline the arguments that establish its validity as a genuine test of subjecthood in Kannada, and then examine which, if either, of the prospective candidates in the DSC fulfills the tests.

3.2.1. Reflexivization: In Kannada, distinct reflexive forms (tānu 'self' and its variants) are used only with third person referents. The crucial condition for reflexivization is that the controller of the reflexive must be the subject of the sentence. When the controller is not the subject (e.g., direct object or indirect object), reflexivization is blocked and, instead, pronominalization takes place. This 'subject controller condition' is illustrated in the sentences of (16):

16a. jān$_i$ mēri$_j$ge   tanna$_i$ jāgavannu biṭṭukoṭṭanu.
       John Mary -d.   self's   place -acc. gave up
       John gave up his own place for Mary.

16b. jān$_i$ mēri$_j$ge   avaḷa$_j$/*tanna$_j$ jāgavannu biṭṭukoṭṭanu.
                        her /*her own
       John gave her place(back) to Mary.

16c. jān$_i$ mēri$_j$yannu avaḷa/*tanna$_j$ manege   karedukoṇḍu hōdanu.
       John Mary -acc. her /*herself's home -to   took
       John took Mary to her home.

Notice that the reflexive in (16a) refers only to the subject, John, and
not to the indirect object, Mary. If the latter reading is intended (cf.
(16b)), then pronominalization is employed, not reflexivization. Similarly,
with the direct object Mary as the antecedent (cf. (16c)), the grammatical
strategy is pronominalization, not reflexivization.
       A couple of additional facts about reflexivization in Kannada deserve
to be noted. Sentence (17) shows that (a) the reflexive form may precede
its controller, and, therefore, the above mentioned subject controller
condition is not an accidental effect of word order; and (b) reflexiviza-
tion in Kannada can 'go down' into embedded sentences, as in Japanese:

17.   [jān tanna$_i$ nijavāda gaṇḍa   endu] mēri$_i$ tiḷididdāḷe.
       John self's real   husband compl. Mary   thinks
       Mary thinks that John is her real husband.

With these facts in mind, let us now turn to the behavior of the dative
and the nominative NPs in the DSC. The examples in (18) show that the
dative NP not only controls reflexive (18a), but also reflexivizes an
identical NP in an embedded sentence (18b):

18a. mūrtige   tanna makkaḷa bagge tumba abhimāna.
       Murti -d.   self's   kids of toward much   pride
       Murti is very proud of his kids.

18b. dinēshanige kyārolin tannannu prītisuttāḷe endu gottu.
       Dinesh -d. Caroline self -acc. loves   compl. knows
       Dinesh knows that Caroline loves him.

However, only the datives in the DSC of the type described in section 2
above, and not any other datives (e.g. the indirect object in bitransitive
sentences), control reflexivization (19):

19.   avanige anitāge   tanna kārannu koḍalu ishṭavilla.
       he -d.   Anita -d. self$_i$'s car -acc. to give liking neg.
       He doesn't wish to give his car to Anita.

In (19), the reflexive refers only to avanu 'he', the so-called dative
subject, and not to the other dative, Anita. The examples in (18), there-
fore, show that Reflexivization treats the dative NP in the DSC as subject.
       It is very difficult to construct examples where the nominative NP in
the DSC is a potential controller of Reflexivization, for very few verbs
permit animate NPs in this position. (20) is a crucial example of the

kind we need to test the subject property of the nominative NP in the DSC:

20?   tanage sōmanu tumba ishta.
        self -d. Soma   much   liking
        Soma is very fond of himself.

(20) is so bad, it takes an effort to retrieve the intended meaning. The reason (20) is a relevant case is the following: if the nominative NP, soma, were the subject in the DSC, it should be able to reflexivize the dative NP, avanu 'he', when the two NPs are coreferential. However, such reflexivization produces a totally ungrammatical, and in fact, an incomprehensible sentence. Compare it with (21):

21.   sōmanige tānu tumba ishta.
        Soma -d. self much   liking
        Soma is very fond of himself.

(21) is perfectly grammatical and felicitous. The difference in grammaticality cannot be attributed to word order, because, as we have seen above (cf. 17), the reflexive can precede its controller in Kannada. Moreover, (21) is still grammatical with the reflexive preceding the controller (21a):

21a.   tānu sōmanige tumba ishta.

In other words, reflexivization treats the dative NP and not the nominative NP as the subject in the DSC.
    3.2.2. Coreferential Subject Deletion: In Kannada and other South Asian languages, a favorite mode of conjoining sentences is by turning the main verbs of all but the last component clause into participles, and deleting all but one (either the first or the last) occurrence of identical subjects (cf. (22)).

22.   uma   angadige   hōgi   ∅ tarakāri   tandu   ∅ adige
        Uma   shop-to   having gone vegetables   having brought meal
        mādidalu.
        made
        Uma, having gone to the shop, having brought vegetables, cooked the meal.
        Uma went to shop, brought vegetables, and cooked the meal.

There is no restriction on the number of clauses that might be thus strung together, but there is an important restriction on the relationship among the subjects of the clauses so conjoined - they must be identical.[5] When the subjects are not identical an absolutive construction (23) is employed, and of course, there is no deletion[4]:

23.   uma   tarakari   taralu   amma adige   mādidaru.
        Uma   vegetables upon bringing mother meal   cooked
        On Uma bringing the vegetables, (her) mother cooked the meal.

Note the different verb form, taralu, which is an absolutive form, as against tandu, which is simple past participle. We may refer to the rule

that deletes subjects under identity as 'Coreferential Subject Deletion'
(CSD).[5]

This rule is sensitive to the notion 'subject' in two ways: both the
controller and the victim of deletion must be subjects. For example, both
(24) and (24a) are ungrammatical, because in these sentences, while the
controller of deletion is subject, the victim is direct object and indirect
object respectively:

24*   rāmanu $\emptyset_i$ karedu   shyāmanu$_i$ hattira bandanu.
       Rama   having called Shyam   near   came
       Rama having called [him] Shyam came near.

24a*   rāmanu $\emptyset_i$ haṇa   koṭṭu   shyāmanu$_i$ angaḍige   hōdanu.
       Rama   money   having given Shyam   to the store went
       Rama having given [him] money, Shyam went to the store.

These examples show that mere identity is not sufficient - the identical
NPs that are deleted by the rule must be subjects of their respective
clauses.

Examples (25) and (25a) show that the controller of CSD must also be
subject. In these sentences, the deleted NPs are subjects, but the NPs
under identity to which they are deleted are not:

25*   āke kūliyava$_i$nannu karedu $\emptyset_i$ sāmānu   iḷisidanu.
       she porter$_i$ -acc. having called $\emptyset_i$ baggage put down(masc.)
       She having called the porter, ($\emptyset$ =he) set the baggage down.

25a*   āke kūliyava$_i$nige haṇa koṭṭu $\emptyset_i$ santōshadinda horaṭu hōdanu.
       she porter$_i$ -dat. money having given $\emptyset_i$ happily   went   away(masc.)
       She having given money to the porter ($\emptyset$=he) went away happily.

Thus,CSD provides two strong tests of subjecthood in Kannada: both the
controller and the victim of deletion must be subjects, and must fulfill
the identity constraint.

The following two sentences show that the dative NPs in the DSC behave
like true subjects with respect to this rule. In (26) a dative subject has
been deleted under identity with a nominative subject. In (26a) the dative
subject acts as the controller for the deletion of a nominative subject:

26.   [$\emptyset_i$ hendatiya   jnāpaka   bandu]   rāma$_i$ vihvalanādanu.
       $\emptyset_i$ wife's   remembrance having come Rama$_i$ went beserk
       Remembering his wife, Rama went beserk.

26a.   [$\emptyset_i$ bisilinalli tirugi]   surēsha$_i$nige bāyārike āyitu.
       $\emptyset_i$ sun-in   having wandered suresha$_i$ -d.   thirst happened
       Having wandered in the sun, Suresha became thirsty.

Underlyingly, the first clause in (26) and the second clause in (26a)
have structures similar to those underlying the DSC, and would be independ-
ently realized as (27) and (27a) respectively.

27.   rāmanige   hendatiya   jnāpaka   bantu.
        Rama -d.   wife -poss. remembrance   came
        Rama remembered his wife.

27a.   sureshanige   bāyārike   āyitu.
        Suresha -d.   thirst   became
        Suresha became thirsty.

While the dative NP in the DSC behaves like a subject with respect to
CSD, the nominative NP does not. In (28), a nominative NP in the DSC
is the controller of deletion; in (28a), it is the victim - both are
ungrammatical.

28*   [$\emptyset_i$ nannannu cennāgi mātanādisi]   nanage avalu$_i$ ¨ ishta
        $\emptyset_i$ I -acc. nicely   having talked to I -d. she(nom)$_i$ liking
        (ādalu).
        (became (fem))

28a*   [avalu$_i$ nannannu cennāgi mātanādisi] nanage $\emptyset_i$ ishta (ādalu).
        She having talked to me nicely, I like her.

Again, the second clause in (28) and the first clause in (28a) would be
independently realized as an instance of the DSC, given here as (28b).

28b.   nanage   avalu   ishta   ādalu.
        I -dat.   she   liking   became
        I liked her.

This makes it clear that the CSD, like Reflexivization, treats only the
dative NP, and not the nominative NP, as the subject in the DSC.

    3.2.3. Causativization. Another rule that is sensitive to the gram-
matical relation subject-of in Kannada is Causativization. For the
purposes of this paper, I shall adopt the analysis of causativization
presented in Comrie (1973). In this analysis, causatives involve a
unisentential surface structure derived from an essentially bisentential
underlying structure, the "clause-union" being the effect of the merger
of the matrix verb of causation with the complement verb. What is directly
of interest to us here is the effect of clause union on the grammatical
relations in the complement clause. In this respect, causative sentences
in Kannada fall into three patterns, summarized below as (29a,b, and c)
(examples follow):

29a.   The subject of an intransitive complement sentence becomes the direct
        object of the causative sentence;
29b.   The subject of a transitive complement sentence becomes the instru-
        mental object of the causative sentence;
29c.   The subject of a sentence with an "ingestive" verb (to be explained
        below) becomes the indirect object of the causative sentence.

    Causativization affects only the grammatical relation of the comple-
ment subject - all other grammatical relations are unaffected. Let me
now illustrate the three patterns. In (30a) below, an intransitive
sentence such as (30) is embedded as complement of a causative verb:

30.   hakki   hāruttade.
        bird   flies
        The bird flies.

30a.   huḍugaru hakkiyannu   hārisuttāre.
        boys   birds -acc. fly -cause
        The boys make the bird fly.

(31a) illustrates causativization of an transitive complement sentence
(31), following the pattern described in (29b):

31.   āḷu   sāmānannu   ettiṭṭanu.
        servant   baggage -acc.   put away
        The servant put away the baggage.

31a.   rāyaru   āḷininda   sāmānannu   ettiḍisidaru.
        Rao   servant -instr. baggage -acc. put away-cause-past
        Rao had the servant put the baggage away.

    Masica (1976) defines "ingestive" verbs as those "having in common a
semantic feature of taking something into the body or mind (literally or
figuratively)..." (p.46). Continuing, he observes, "the "ingestive" verbs
as a group might be regarded as occupying a halfway station between trans-
itives and intransitives, since the object in question can frequently be
dispensed with in favor of concentration on the activity itself..."(p.48).
Examples of causatives of ingestive verbs are given in (32) - (33):

32.   magu   hālu   kuḍiyitu.
        child(nom) milk   drank
        The child drank milk.

32a.   tāyi   maguvige   hālannu.   kuḍisidaḷu
        mother(nom) child -d. milk -acc. drink-cause-past
        The mother made the child drink milk.
        (=The mother fed the child.)

33.   magaḷu   aḍige   kàlitaḷu.
        daughter(nom) cooking   learnt
        The daughter learnt cooking.

33a.   tāyi   magaḷige   aḍige yannu   kalisidaḷu.
        mother(nom) daughter -d. cooking -acc.   learn-cause-past
        The mother caused the daughter to learn cooking.
        (=The mother taught (her) daughter cooking.)

    With these three patterns of causativization in Kannada in mind, let
us now turn to the causatives of dative subjects. (34a) is the causative
version of (34).

34.   nanage talenōvu   bantu.
        I -d.   headache   came
        I got a headache.

34a. nīnu nanage talenōvu (-annu) bariside.
      you   I -dat. headache (-acc.) come-cause-past
      You made me get a headache.

There are at least two ways of interpreting the facts in (34a). Under
one analysis, the NP that gets the dative marking after causativization may
be considered the underlying complement subject, with the causativization
rule treating it as the subject of an "ingestive" verb (cf. 32a and 33a).
Let us call this the ingestive verb analysis. Under the second analysis,
the NP that gets the accusative marking after causativization may be
considered the underlying complement subject, with the causativization
rule treating it as the subject of an intransitive verb (cf. 30a). Let
us call this the intransitive verb analysis. As we shall see later (in
section 5.0), neither analysis is without its share of problems from the
point of view of an explanatorily adequate grammar of the language. How-
ever, since the facts in (34a) bear directly upon the question of deciding
which NP in the DSC is the underlying subject, it may be worthwhile to
pursue the alternatives at hand, if only to make explicit the assumptions
made by each of the alternative analyses.
    There are several points in favor of the ingestive verb analysis of
the DSC with respect to causativization. First, it captures the native
speakers' perception of the dative NP in the DSC as the underlying subject
(cf. section 1.0). Second, the semantics of the DSC outlined in section
2.0 are consistent with the treatment of the DSC predicates as ingestive
verbs, for, recall that the single most important semantic feature of the
dative NP in the DSC is its role as an experiencer/recipient. The sub-
jects of ingestive verbs are also semantically experiencers or recipient.
Third, there is interesting cross-linguistic evidence indicating that it
is not unnatural for non-volitional complement subjects to take the dative
case marking subsequent to Causativization. This is precisely what happens
in one pattern of causativization in Hebrew, as shown in Cole (in this
volume). Finally, the treatment of the accusative NP in (34a) as an
underlying object (which is the only way the ingestive verb analysis can
account for it-- note that all other grammatical relations in the comple-
ment sentence except the subject remain unaffected by the clause union)
is also supported by the following fact: in Malayalam (a sister Dravidian
language) and a few other South Asian languages, the NP that shows up with
a nominative or ∅- case marking in non-causative versions of the DSC
Kannada (see, for example (1)) appears with an overt accusative marking,
as illustrated in (35):

35a. enikku rāmane   ariññilla.
      I -dat. Raman -acc. knew-not
      I didn't know Raman.   (Masica 1976: 163)

35b. enikku avane   vēnam.
      I -dat. he -acc. need
      I need him.   (Agesthialiugom 1972: 8)

Furthermore, as pointed out in section 2.0 and also in Gowda (1974), Kannada
permits paraphrases of most DSC sentences in which the NP corresponding to
the nominative in the DSC is a direct object and takes the accusative (cf.
13a and 14a). Thus,the ingestive verb analysis of the DSC with respect to

causativization is not implausible.

Under the intransitive verb analysis, the DSC conforms to the intransitive sentence causativization pattern described in (29a). Under this analysis, the dative NP in (34a) is an underlying complement indirect object and remains unchanged after causativization. The most attractive aspect of this analysis is that it neatly accounts for the accusative in the causative versions of the DSC. The treatment of apparently transitive verbs such as 'know' 'like' as intransitives in this analysis may, at first, sound suspicious, but it could, presumably, be justified by pointing to the 'stative' modality of the verbs in the DSC, and also by invoking such cross-linguistic parallels as 'This soup tastes good' or 'He is well-known' in English and some other languages.

I shall discuss the implications of the two alternative analyses in section 5.0. At this point, suffice it to note that the evidence from causativization per se as illustrated in (34a) is consistent with the analysis of either the surface dative NP or the surface nominative NP as the underlying subject in the DSC.

3.2.4. Equi-NP Deletion: Yet another transformation that is sensitive to the notion of 'subject' in Kannada is Equi-NP Deletion. This rule deletes the complement subjects of verbs belonging to certain specified semantic classes when the former are identical to the matrix subjects, direct objects or indirect objects. For example, verbs of desiring, wanting, trying, consenting, etc., require obligatory deletion of their complement subjects under identity with their matrix subjects (36)[6]:

36. khaidiyu$_i$ [$\emptyset_i$/*rāmanu/*avanu$_i$/*tānu$_i$ tappisikoḷḷalu] prayatnisidan
     prisoner $\emptyset_i$/*Rama /*he$_i$ /*himself$_i$ to escape   attempted
     The prisoner attempted to escape.

Similarly, verbs of asking, requesting, ordering, permitting, helping, etc., require obligatory deletion of their complement subjects under identity with matrix objects (37):

37. daḷapatiyu$_i$ sainikarige$_j$ [$\emptyset_j$/*avanu$_i$/*tānu$_i$ /*avaru$_j$
     commander$_i$ soldiers$_j$ -dat.[$\emptyset_j$/*he$_i$ /* himself$_i$/*they
     /*tāvu$_j$ vāpasu hōgalu] ajnemādidanu.
     /*themselves back   to go] ordered
     The commander ordered the soldiers to retreat.

Thus, Equi-NP Deletion is another empirical test of subjecthood in that with verbs belonging to the first category discussed above, both the controller and victim of deletion must be subjects; and with verbs of the second category, the victim of deletion must be subject.

Let us now examine which NP in the DSC behaves like a subject in functioning as the controller and/or victim of Equi. We shall first discuss the role of the dative NP. A structure similar to the one underlying (38) has been embedded as a complement of an Equi verb requiring subject-subject identity in (39):

38. avanige koppakke varga   āyitu.
     he -d. koppa -to transfer happened
     He was transferred to Koppa.

39.   avanu_i [∅_i koppakke   vargavāgalu]   ishṭapaḍuvudilla.
     he_i   ∅_i koppa -to   to be transferred   wish not
     He doesn't wish to be transferred to Koppa.

(Despite the English rendering, Passive plays no role in the derivation
of either (38) or (39)- in fact, the DSC cannot be passivized). (39) shows
that deletion of the dative NP in the DSC under Equi is ungrammatical.[7] How-
ever, the dative NP can be the <u>controller</u> of Equi (40):

40.   avaḷige_i   [∅_i maduve   āgalu]   ishṭa   illa.
     she_i -d.   ∅_i marriage to become   desire   not
     She doesn't wish to get married.

Let us now turn to <u>Equi</u> verbs of the second category. In (41), the dative
NP in a DSC sentence has been deleted under identity with the matrix in-
direct object - the output is ungrammatical.

41*   avaru shīlaḷige   [∅_i āparēshan   āgalu]   hēḷidaru
     they shila_i -dat. ∅_i operation to become   told
     They told Sheela to have an operation.

Note that the complement sentence by itself may be realized as an instance
of the DSC, as shown in (42):

42.   shīlaḷige   āparēshan   āyitu.
     shida -d.   operation became
     Sheela had an operation.

A grammatical version of (41) (shown below as (43)) would have the nomina-
tive subject counterpart of (42) (shown below as (44)) as complement:

43.   avaru shīlaḷige_i   [∅_i āparēshan mādisikoḷḷalu]   hēḷidaru.
     they sheela_i -d.   ∅_i operation to have done + refl.   told
     They told Sheela to have an operation [lit. done to herself].

44.   shīla   āparēshan mādisikondalu.
     sheela(nom) operation had done +reflexive
     Sheela had an operation [done to herself].

To return to the question of the ability of the dative NP in the DSC to
function as victim of deletion   under <u>Equi</u> - verbs of the second category
(those that require matrix object - complement subject identity), the
ungrammaticality of (41) shows that the dative NP fails the test. As for
its ability to function as the controller of deletion, it turns out that
none of the Equi verbs of the second category (e.g., order, advise, request,
ask, coax, etc.) occur as predicates in the DSC and consequently there is
no question of the dative NP in the DSC functioning as the controller of
deletion with verbs of this class.
    We shall now examine the behavior of the nominative NP in the DSC with
respect to Equi. Human NPs do not normally occur as the nominatives in
the DSC except with a small class of verbs such as <u>like</u>, <u>appeal to</u>, and
kinship predicates and even when they do, they do not readily lend them-
selves to tests for Equi. However, (45) below is one of those hard to
find examples that seems to be adequate for our purpose. (45) illustrates

the result of deleting the nominative NP in a DSC complement sentence under
identity with the matrix subject. (46) is an independent realization of
the complement sentence in (45).

45☆   rāma$_i$ [avaḷige   ∅$_i$ ishṭa `   āgalu] prayatnisida.
       Rama$_i$ she -d. $_i$ liking become   tried
       Ram tried to be liked by her.

46.   avaḷige   rāma   ishṭa   āda.
       she -d.   Rama   liking   became
       She liked Rama.

       Note that while (46) is a perfectly well-formed sentence - an example
of the DSC - , the deletion of the nominative NP under identity with the
subject of an Equi-verb in (45) results in an ill-formed output. (45), in
conjunction with (39) above shows that neither the dative NP nor the nomina-
tive NP in the DSC behaves like a complement subject with respect to Equi-
verbs of the first category.
       (47) illustrates the effect of deleting the nominative NP in the DSC
under identity with an indirect object of an Equi-verb of the second
category:

47☆   rāmanu   shyāmanige [sōmanige   ∅$_i$ ishṭa   āgalu]   sahāya   mādidanu
       Rama(nom) Shyam -d. Soma -d.   ∅$_i$ liking to become help   did
       Rama helped Shyama (for him = Shyama) to be liked by Soma.

       Note that (47) is ungrammatical, indicating that the nominative NP
in the DSC fails to behave like a subject with respect to Equi-.
       The behavioral properties of the dative and the nominative NPs in the
DSC with respect to transformations that crucially refer to the grammatical
relation subject-of in Kannada may be summarized as follows. The dative
NP in the DSC behaves exactly like a subject with respect to Reflexivization,
Coreferential Subject Deletion, and (under the ingestive-verb analysis)
Causativization. It fails to behave like a subject in not being able to
delete under Equi, but it does behave like a subject in controlling deletion
with Equi verbs of the first category. The nominative NP in the DSC, on
the other hand, does not behave like a subject with respect to Reflexivization,
Coreferential Subject Deletion, and Equi-NP Deletion, but does seem to behave
like a subject with respect to causativization (under the intransitive
verb analysis).
       Thus, as regards the overall syntactic properties of the two putative
subject NPs in the DSC, we find that the coding and behavioral properties
yield conflicting results -   verb agreementsseems to point to
the nominative NP as subject of the DSC, while the evidence of behavioral
properties seems to be predominantly in favor of considering the dative
NP as subject in the DSC. This conflicting evidence raises several in-
teresting questions related to the treatment of the DSC in the grammar
of Kannada, and in a theory of relationally-based grammar in general, which
we shall take up in section 5.0.

4.0. TREATMENT OF THE DSC IN EARLIER LINGUISTIC LITERATURE.

Before proceeding to examine the theoretical considerations involved in the choice of an adequate treatment of the DSC, I would like to pause briefly to review the treatment of this construction in earlier linguistic literature dealing with various South Asian languages. This is necessary, I believe, not only to make clear the extent of my debt to my predecessors in this attempt, but also to provide a frame of reference for evaluating the merits and short-comings of the present study.

Considering the crucial role of the DSC in the communicative repertoire of South Asian languages, and, moreover, the intriguing ambivalence of the construction, it is surprising that there have been so few studies that treat the topic in any reasonable detail. For the purposes of this review, I shall divide the studies which are either devoted exclusively to the DSC or briefly discuss the DSC in passing - into three groups: (a) those that consider the DSC a quirk of case marking; (b) those that treat the dative NP as the underlying subject and attempt a syntactic and/or semantic characterization; and (c) those that treat the construction as lacking a true subject.

4.1. In the first group belong the traditional grammars of Kannada, for example, the śabdamaṇidarpaṇa of Kēśirāja (1240 A.D.), and karnātaka śabdānu śānam of Bhattakālanka (1406 A.D.). Both grammarians mention the construction in the course of their discussion of the distribution of the dative in Kannada, and note that the dative - a marker of the recipient or sampradāna kāraka - is used with predicates expressing liking, disliking, mental dispositions (e.g. anger, envy) and inherent qualities (cf. Narasimhāchar 1968: 150-1; Sharma 1968: 195ff). They do not, however, discuss the grammatical status of the NP that gets the dative case marking.

4.2. In recent years, a number of studies have appeared that explicitly treat the dative NP as the underlying subject in the DSC. To this group belong the works of Kachru (1970), Agesthialingom (1972), Gowda (1974), Krishnamurti (1975), McAlpin (1975) and Masica (1976).

The problem posed by the DSC for grammars of South Asian languages was first observed in Kachru (1970). In that paper, Kachru points out that the dative NP in the DSC behaves like a subject in controlling reflexivization in Hindi-Urdu, while, at the same time, the dative is semantically a recipient. In order to reconcile these facts, she suggests a derivation in which the dative NP originates as subject and is then marked dative, by virtue of its semantic role, by a general transformational rule. While Kachru's analysis is substantially correct, it seems to be deficient to the extent that it does not recognize the 'governed' nature of the phenomenon and, consequently fails to account for the difference between true DSC sentences and other nominative subject sentences where the subject is an experiencer or recipient.[8]

Agesthialingom (1972) briefly mentions the problem in the course of his discussion of 'must' in Dravidian. Observing that verbs such as 'want' take 'dative subjects' and that DSC sentences often have nominative subject paraphrases, he tentatively suggests that the dative NP in such sentences be posited as underlying subject and the nominative NP as direct object and that the surface forms be derived "by making use of some rules (some kinds of flip rule)" (p.10). Gowda (1974), in his discussion of the dative in Kannada, presents a similar analysis and comes to the same conclusion, but he doesn't go into the details of the putative transformational rule, either.

Krishnamurti (1975) and McAlpin (1975) are primarily concerned with the semantics of the DSC. Krishnamurti notes that verbs of cognition take dative subjects in Telugu (a sister Dravidian language). He also rightly observes that the verbs which occur in the DSC are either stative or 'en-stative' ("entering into a state" as in 'I came to know that'). Both Krishnamurti and McAlpin (1975) observe that dative subjects are non-volitional. However, neither study attempts to characterize the semantic classes of predicates that govern the DSC. Masica (1976) does not directly deal with the derivation of dative subject sentences but only with their distribution. Nevertheless, he notes in passing that "a number of hidden relations, involving reflexive-possessives, conjunctive participles, etc., indicate that the experiencer is still in some sense the "subject"(p.162). By the way, the evidence of Reflexivization with the DSC is not restricted to reflexive-possessives, at least in Kannada). He also observes that the DSC predicates express 'subjective experience', but his definition of the term is, unfortunately, rather vague.

4.3. We now come to the third group of studies, of which I am aware of only one example, Lindholm (1975). In a footnote in his work on the adverbial participles in Tamil, another major Dravidian language, Lindholm writes, "True subjectless sentences generally involve certain verbal notions of sensation, emotion, and cognition in which the participant is felt to be neither agent of something, nor patient of something, but rather recipient of something (thus the use of the dative case)"(p.9). It is obvious from the discussion in previous sections that such an approach is neither intuitively satisfactory nor is supported by the syntactic and semantic properties of the DSC.

As the above brief discussion indicates, most modern scholars (with the exception of Lindholm) agree that the dative NP should be posited as the subject in the DSC. However, they differ on the question of how the surface properties of the DSC are to be accounted for - Kachru suggesting that the latter are a result of a general case-marking rule, while Agesthialingom and Gowda seem to have in mind some kind of a relation-changing rule. We shall now turn to a detailed examination of the assumptions made by and the implications that follow from these and other alternative proposals.

5.0. DISCUSSION. In this section I shall discuss several alternative ways of analysing the properties of the DSC, including those reviewed in the previous section. It seems that there are at least four logical possibilities in this regard, which may be termed (i) the null hypothesis; (ii) the dative subject hypothesis; (iii) the nominative subject hypothesis; and (iv) the squishy subject hypothesis. I shall discuss the assumptions made by and the implications of each of these analyses in turn.

The null hypothesis is essentially the position taken in Lindholm (1975). As noted in the last section, Lindholm treats the sentences in what is termed the DSC here as truly "subjectless" sentences. It seems to me that such an approach merely avoids the complications raised by the construction. In particular, it does not explain the subject-like behavior of the dative NP with respect to several transformations discussed above, or that of the nominative NP with respect to verb agreement. The null hypothesis seems to be highly arbitrary in dismissing these systematic properties of the DSC as purely accidental.

The dative subject hypothesis (or DSH) treats the surface dative NP in the DSC as the underlying subject. Notice that the DSH provides a straight-

forward explanation for the dative NP's ability to control reflexivization
and to be both controller and victim of CSD. It also accounts for the
dative and accusative markers in the causative versions of the DSC, under
the ingestive verb analysis. (It may be recalled that, as shown in section
3.2.3, the ingestive verb analysis of causativization with respect to DSC
has strong semantic and syntactic motivation, both within Kannada and
cross-linguistically.) It is true that the DSH does not explain why the
dative NP fails to delete under Equi. However, the DSC is at least partially
consistent with the facts of Equi: it explains why the dative NP can be
the controller of deletion with Equi verbs requiring subject - subject
identity. The case for the DSH appears stronger when we take into account
the fact that none of the alternative analyses explains even the controller-
ability of the dative with respect to Equi. Finally, the DSH accounts for
the ability dative NP to undergo Equi deletion in a few exceptional cases
(see footnote 7).Thus, the dative subject hypothesis seems to be consistent
with the transformational behavior of the dative NP in the DSC.

The DSH seems to run into a problem in explaining the facts of verb
agreement, for it is the nominative NP and not the dative NP that controls
verb agreement in the DSC. However, given the device of derivational
stages - a device in transformational grammar that is meant precisely to
handle cases of this sort - the facts of agreement are easily accounted
for. The explanation will be along the following lines: the dative NP
indeed originates as the subject in the DSC and acts like a subject with
respect to transformations that refer to the notion of subject, but at
the stage of derivation at which the rule of verb agreement applies, the
dative NP is no longer the subject, hence its failure to control verb
agreement. In other words, the DSH involves the positing of a relation-
changing rule that, in effect, changes the underlying subject into an
indirect object (hence the dative marking) and the underlying object into
surface subject (hence the nominative and verb agreement).[9] This rule
would be ordered after all the cyclic transformations. It would, natur-
ally, be a governed rule, the governing element being the complex of
semantic (and pragmatic) factors discussed in section 2.

I shall now take up the nominative subject hypothesis (NSH). Under
this analysis, the nominative NP in the DSC is both the underlying and
surface subject. The most appealing feature of this hypothesis is the
simple and straightforward way in which it explains the facts of agree-
ment. However, this analysis fails to explain the sentence-initial
position of the dative NP except by appealing to a low-level topicaliza-
tion rule that somehow seems to apply with suspicious regularity in the
DSC. The NSH also seems to account for the facts of causativization, if
we adopt the intransitive verb analysis. It runs into serious difficulties,
however, with respect to Reflexivization and Coreferential Subject Deletion.
For, it may be recalled that not only does the dative NP behave like a
true subject with respect to these rules, but the nominative NP clearly
does not behave like a subject in these cases. In the face of the evidence
presented in section 3, it is hard to maintain that the nominative NP is
the subject in the DSC unless we abandon the independently motivated
generalizations regarding the crucial role of the subject NP in these
processes, and attach ad hoc conditions on the rules. As for Equi, the
NSH fares even worse than the DSH in that the nominative NP cannot even
be the controller of Equi as the dative NP can. Thus, excepting the
agreement facts, the NSH is clearly an inferior alternative to the DSH,
in that it complicates the grammar of the language.

The derivational approach which was invoked with the DSH does not help the NSH, for the following reason. In the derivational approach, one would argue that the nominative NP indeed originates as subject, and behaves like a subject with respect to an early rule such as causativization (under the intransitive verb analysis), and, after causativization, a putative relation-changing rule applies, changing the dative NP (which, presumably, was an indirect object in the underlying representation) into subject, and the nominative NP into - well, a non-subject. This would explain the subject-like behavior of the dative NP with respect to Reflex-ivization and Coreferential Subject Deletion. However, this would not be sufficient to explain the facts of verb agreement, for recall that the main point in favor of the NSH was that it helps retain the generalization about subject-verb agreement that seems to hold elsewhere in the language. After the application of the relation-changing rule making the nominative NP a non-subject, one can no longer extend the generalization to the DSC. The only way the NSH can account for both the transformational behavior and the agreement facts in the DSC is by resorting to another relation changing rule that applies after all the transformations have applied, and has the effect of neatly reversing the effect of the original relation changing rule, so as to make the nominative NP once again the subject so that the verb may agree with it. Notice the implications of this position: the very motivation that lent initial plausibility to the NSH - that of providing a straightforward analysis of the DSC consistent with the gen-eralization regarding subject-verb agreement in the language - leads to what seems to be the reductio ad absurdum of the derivational approach, positing one hypothetical rule to account for certain facts and then another rule that undoes the effects of the first in order to account for certain other facts. It should be obvious that the DSH, which involves only one putative relation changing rule is clearly superior to the NSH.

The squishy subject hypothesis (SSH) derives from the work of Keenan on the question of formulating a universal definition of grammatical relations such as 'subject of' (Keenan 1976). Pointing out that there are no necessary and sufficient properties which uniquely characterize the notion of 'subject' across languages, Keenan argues for a cluster or 'multi-factor' concept of subject. According to him, the subject of a particular sentence in a given language is that NP which exhibits 'a clear preponderance' of the properties that are characteristic of subjects in that language. It follows from this approach that some NP in a sentence may be 'more subject-like' than some other NP.

At first sight, the fact that the dative NP in the DSC behaves like a subject with respect to some criteria while the nominative NP behaves like a subject with respect to others would seem to find a ready explanation in a theory that treats subject as a cluster concept. However, as Johnson (to appear) has pointed out, there are serious problems with such a view of grammatical relations. For one thing, the question of what constitutes 'a clear preponderance' (of subject properties) is left vague. As Johnson rightly observes, this notion leads to unacceptable results, no matter whether we interpret it to mean 'a majority of properties' on the subject properties list or 'more properties' relative to some other putative subject NP in the sentence. This follows from the fact that no single property on the subject properties list is both necessary and sufficient and thus it is possible to select subjects in three or more languages on the basis of totally different criteria, while maintaining, at the same

time, that each has 'a clear preponderance' of properties on the list.
However, as Keenan himself rightly observers, "if we use different criteria
to identify subjects in different languages, then
"subject' is simply not a universal category and apparently universal gen-
eralizations stated in terms of that notion are not generalizations at
all" (1976: 305). This suggests that the squishy subject hypothesis -
despite its superficial attractiveness in accomodating phenomena such as
the DSC in Kannada - is inherently flawed. It is also incompatible with
original version of relational grammar presented in, e.g., Perlmutter and
Postal (1974) and Johnson (1974), in which basic grammatical relations are
regarded as discrete, pretheoretical primes.

Moreover, the fact that there are cases where putative subject NPs behave
differently with respect to various subject criteria need not necessarily
force us to adopt a squishy concept of subjecthood. As Johnson (to appear)
has argued, all such cases can be easily accounted for within a theory
that has intermediate derivational stages. The device of intermediate
derivational stages is designed precisely to handle cases of this sort
(see, for example, the analysis of B-Raising in English in Postal (1974))
and has been generally recognized as being richly motivated and crucial to
the theory of transformational (and, for that matter) relational grammar.

The dative subject hypothesis discussed earlier in this section is a
case in point. It will be recalled that the DSH depends crucially for its
working on the notion of intermediate derivational stages. For, what ac-
counts for verb agreement in the DSC under this analysis is the claim that
at the stage of the derivation at which agreement rule applies, the dative
NP is no longer subject, having been demoted by the putative relation
changing rule. Thus the fact that the DSC data can be readily accounted
for in the derivational approach takes away what appears at first sight
to be a strong empirical ground for adopting the squishy subject hypothesis.

In summary, we began this section by naming four possible analyses of
the DSC in Kannada. Of these, the null hypothesis was rejected as too ad
hoc and uninsightful, while the nominative subject hypothesis was shown
to be more complex and less convincing than the dative subject hypothesis.
The DSH was shown to be the most viable analysis because it is consistent
with all the relevant independently motivated generalizations in the
language with respect to several deep and surface syntactic processes.
Finally, it was argued that the dative subject hypothesis is to be preferred
to the squishy subject hypothesis as well, in that the former, while being
equally adequate in explanatory power, eschews the complications and con-
tradictions inherent in the latter. The DSH is also consistent with the
basic axiom of relational grammar that grammatical relations are discrete
entities.

6.0. CONCLUSION. In this paper, I have attempted to characterize the
semantic and syntactic properties of the dative subject construction and
to provide a grammatical analysis of the data consistent with the tenets
of comtemporary linguistic theory. In particular, I have argued that an
adequate treatment of the DSC involves a derivational analysis that treats
the surface dative NP as the underlying subject and involves a putative
relation changing rule that converts the underlying subject into a surface
indirect object, and the underlying direct object into a surface subject,
thus accounting for the apparent discrepency in the deep and surface syntactic
properties of the construction. I am painfully aware that the analysis

presented here leaves a number of questions unanswered, for example, the correct analysis of the effect of causativization in the DSC and the explanation for the effect of Equi on the DSC, among others. Answers to these questions require much more detailed investigations of Kannada than are available at this point.

FOOTNOTES

[1]I am deeply indebted to Professors Peter Cole, Georgia Green, Yamuna Kachru and Jerry Morgan for their invaluable suggestions and criticisms, but for which this paper would be much worse than it is. I hereby claim the dubious distinction of being solely responsible for all the short-comings that remain.

[2]"A high development of this feature is characteristic of India - perhaps slightly more of Dravidian and slightly less of Bengali (and much less of the Munda languages), but nevertheless present in all the major languages to a degree that seems to be unparalleled elsewhere." (Masica 1976: 164).

[3]Traditional grammarians state this constraint in terms of identity of 'agents' (ēka kartṛ, tulya kartṛ, svayam kartṛ, etc.) - cf. śabdānuśāsanam, sutras 580-3 (Sharma, 1968: 413-6).

[4]This condition is discussed in a celebrated sūtra (no. 260) in the śabdamaṇidarpaṇa (Narasimhachar 1968: 252-3). Although Kēśirāja proscribes the use of -al (the source of the modern -alu) as the ending for the absolutive participle, his sūtra indicates that the use of -al was already widspread in his time (13th century A.D.).

[5]I have called this rule Coreferential Subject Deletion in order to distinguish it from Equi NP Deletion (to be discussed shortly), which is a governed rule. The CSD is not governed and applies across the board with all kinds of verbs. It must be pointed out that there are a handful of what appear to be exceptions to the CSD. These are sentences such as maḷe bandu kere tumbitu (Rain having come, the tank filled up) in which participialization seems to take place even when the subjects are not identical. The details of what is involved in such sentences is not clear at present. However, the explanation, when worked out, is not likely to seriously affect the generalization regarding CSD discussed here.

[6]This condition is hinted at in the sūtra 586 of the śabdānuśānam (Sharma 1968: 417).

[7]There are, however, a few cases in which the dative NP in the DSC does seem to delete under Equi, for example,

    (i)   avaḷu [ø nīrāgaluḷ ishṭapaḍuvudilla.
        'She doesn't wish to be through with her periods'

would be a felicitious sentence in the Indian context, where a woman enjoys freedom from housework during her periods. The complement sentence is independently realized as an instance of the DSC, as in (ii):

    (ii)   avalige   nīrāyitu.
        'She finished her periods.'

Although several addition instances of the dative undergoing Equi-deletion could probably be found, the fact remains that such cases are on the whole rather rare.

[8]Consider, for instance, sentence (i) below, where the dative marking is not permitted (cf. (ii)) although the subject NP is an experiencer:

    (i)   avanu   kole   ādanu.
           he (nom)   murder   became
           He was murdered.
    (ii)*avanige   kole   āyitu.
           he -d.   murder   became
           He was murdered.

[9]It may be argued that the agreement facts can be handled by a case assignment rule rather than a relation changing rule, if the condition for verb agreement is stated in a slightly different manner. Under this proposal, the verb in Kannada agrees with the subject in the nominative. When the subject is not in the nominative, it agrees with a non-subject nominative NP if that NP looks like it could be the subject. Given such a condition on verb agreement, the fact that the verb in the DSC does not agree with its subject (under the DSH) is explained as follows: prior to the agreement rule a (governed) rule of case assignment applies, marking the subject of the DSC dative. Now, since the subject is not in the nominative, the verb agrees with the nominative non-subject.

So far so good, but the real problem for this alternative analysis is the following. How did the non-subject NP in the DSC come to have nominative marking? Recall that DSH requires that this NP be analysed as the underlying <u>direct object</u> in order to account for (i) the paraphrase relationships of the DSC with its nominative subject counterparts, and (ii) the accusative marking on the NP in question subsequent to causativization. If this is so, then the non-subject NP in the DSC would have, if anything, an accusative marking and not the nominative. Consequently, the alleged explanation of verb agreement in the DSC does not stand up.

Now, it may be claimed further that what is relevant for the agreement rule is not the grammatical relation or even the potential case relation, but only the surface case realization. According to this argument, since both the nominative and the accusative ending have ϕ marking in most styles of Kannada, the verb agrees with the unmarked NP which, by virtue of its ϕ marking, looks like a nominative. In evaluating this argument, it must be pointed out that this looks very much like an 'engineering solution' because first it was suggested that the verb agrees with a nominative NP which looks like it could be subject, and now it is being suggested that the verb agrees with a non-nominative NP which looks like it could be nominative.

However, even this will not work, because Kannada permits an overt accusative marker -annu to be attached to any ϕ-marked NP that is a direct object. Thus, in the version of DSH which does not involve a putative relation changing rule, the underlying object would permit the accusative marking. This runs counter to the case-governed verb agreement analysis even with all the ad hoc modifications discussed above.

The real issue here is the fact that the non-subject NP in the DSC in Kannada is unmistakeably in the nominative because it resists optional

attachment of the accusative marker. As long as this is the case, the only reasonable way to explain the agreement facts is by means of a relation chang- ing rule such as the one suggested earlier, which would provide a straight- forward explanation for both case marking and verb agreement in the DSC in Kannada.

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GOVERNED-RULE CHANGE & UNIVERSAL GRAMMAR*

Georgia M. Green

I would like to preface this presentation by remarking that it is a
much more theoretical paper than I am used to presenting. I am a grammarian
at heart, a datamonger, as a colleague of mine used to say. When I have in
the past addressed general audiences on theoretical issues, it has most
often been to present theoreticians with data that seem to indicate that
certain or all available theoretical or descriptive devices are inadequate
if an explanatory account of the data is to be given. But for a while, I
am going to put a theoretician's hat on over my grammarian's hat, first
to talk about some analytic difficulties which make investigation of
governed-rule change exceedingly difficult,[1] and then to talk about
some broader questions and implications for a theory of syntactic change
that this discussion raises.

In 1968, Robin Lakoff made a very provocative speculation about the
nature of governed-rule change: that it was quite different from diachronic
change in ungoverned rules in that the form of governed rules seemed to
remain essentially the same, all the change being confined to the specifi-
cation of the governing class. This speculation was based on Lakoff's
analysis of the complementizer systems of Latin and Spanish, and their
interaction with the rules of Raising and Equi-NP-Deletion. This was an
especially provocative hypothesis, since it was assumed that among un-
governed rules, the structural description and structural change (or the
domain and range) could change as well, to broaden or narrow the range of
structures affected, as among phonological rules and as exemplified in
Klima's (1964) article on change in the relative clause system of English.
This claim about the difference between governed and ungoverned rules
contrasts with the more common view (or lack of view): no one imagined
that the two kinds of rules, if they distinguished among them at all
for synchronic descriptions--a point we shall return to, would behave
differently when their diachrony was scrutinized.

Formally, of course, governed-rule change, if constrained as R.
Lakoff said it seemed to be, could be considered just a subcase of what
is allowed in ungoverned rule change--change in that part of the structural
description of the rule that specified which verbs it applied to (cf.
pp. 162-163 of the present work). But this does not prevent the same
suspicious question from arising that worried Lakoff in her discussion
(1968: 230-31): why should governed rules be so restricted, if indeed
they are, in the ways they can change, rather than having all the possi-
bilities of ungoverned rules, and then some (change in the specification
of governing class, regardless of whether this specification is indicated
in the SD of the rule, or by redundancy rule). Lakoff's speculation, if
correct, implies that governed rules are crosslinguistically identical
at least in historically related languages,[2] in form or specification
(structural/syntactic specification of the controller, trigger, and
victim[3] or affected element in relation to each other) as well as function
or effect (deletion or movement of the victim, for example), differing

only in the specification of the trigger, while ungoverned rules need not be universal in either.[4]   If correct, this hypothesis imposes severe constraints on the form of grammars, but to be correct, it requires a very abstract sort of rules, presumably ones which either affect structures which resemble only very remotely the surface forms that they ultimately generate (differing strikingly in word order for instance) or ones which do not specify items by their relative linear order, or refer to changes in the linear order of elements, but instead would perhaps refer directly to grammatical relations and changes in grammatical relations (cf. Johnson 1974 a, b; Keenan 1975 for further discussion).

Let us suppose, then that there are no obstacles to formulating rules in some such universal way. Why is my contribution the rather meager fare I outlined on p.152 instead of a nice meaty one documenting strong evidence for my one-time speculations concerning the ways in which the situation R. Lakoff described could arise, and say, speculating on explanations for cases which diverge from what I predicted (1974: 61-62):

If governed rules are rules which apply to semantically defined classes of verbs, one would expect change in governed rules to interact with semantic change (change in the set of meanings which a lexical item may encode). I can imagine at least five apparently different sorts of effects which such interaction might produce. First of all, there might be no semantic change among the lexical items which constitute the governing semantic class in the older stage, but a new semantic class might be defined in the later stage which would contain most but not all of the lexical items of the old one (that is, it might contain the phonological descendants of those lexical items), and they might retain their previous meanings.

Second, there might be some semantic drift, and while the new semantic class contained the historical descendants of the lexical items which were the members of the old one, they might not all have their previous meanings. This is a very different sort of situation, and the retention of these lexical items must be considered a coincidence, unless one assumes, contrary to what both Robin Lakoff and I have suggested, that lexical items rather than semantic classes govern rules...[5]

Third, the new definition for the semantic class governing the rule and the semantic changes might work in contrary directions, and no lexical items of the new semantic class would be historical descendants of members of the old class, although the new semantic class might still include some or all of the meanings included in the old one. The development of French provides an example of this on a small scale. In both Latin and French, verbs meaning 'begin' have infinitive complements. But none of the French words (commencer à, se mettre à, se prendre à) is historically derived from any of the Latin verbs (incipere, coepi, exordiri, adoriri, adgredi, ingredi).

Fourth, semantic drift and semantic class re-definition could conspire to leave a governed rule operating on lexical items that are not related either semantically or historically

to the lexical items which th· governed rule operated on in an
earlier stage of the language. At least in theory, in extreme
cases successive re-definitions of the relevant semantic class
could also produce this result.

Finally, it is quite natural to think of the disappearance
of a governed rule (e.g. the imminent disappearance of infini-
tive complements in some Rumanian dialects) as coming about
through successive reductions in the number and scope of the
semantic classes governing a given rule. Whether all of these
situations do in fact occur awaits detailed research, which
I think cannot fail to be interesting and illuminating, what-
ever conclusions are to be drawn from it.

After all, it would have been reasonable to expect me to carry out the
program of research I outlined, given the conditions of 'normal science'.
Well, the first reason why I didn't is that I have never sat down and
gotten into the nitty-gritty of looking for good solid instantiations, but
the real reason is the reason for that: that I early became aware that it
would not be just the somewhat time-consuming but interesting job of tracking
through grammars, dictionaries and concordances to ascertain what lexical
items governed a certain rule at different stages in the evolution of some
language, and what their meanings were at those stages, as I once naively
thought, but a truly Herculean task. And the reason for this goes to the
very root of the problem: figuring out the specification of the class of
lexical items that governs a given, universal rule in a particular lan-
guage, if indeed there is such a class. This is hard enough to do for a
language of which you are a native speaker, or for one for which you have
a sensitive and linguistically sophisticated informant. But to ascertain
that a given class of lexical items governs a certain rule, one must ask
so many questions to rule out other possibilities, that not having an
informant becomes a real obstacle, since acres of text might have to be
searched for relevant evidence, and valuable negative evidence ("Forms
with property X are never grammatical") is generally not to be found, as
it may be when there is informant available. You can ask a <u>person</u>, "Could
you ever use the verb X in such-and-such a syntactic structure?" and give
him suggestive examples. But you cannot ask this of a text, and finding
no examples after years of searching in no way guarantees that there could
not be any, or that there might not have been some that never happened to
get recorded.

It is precisely the problem of ruling out explanations other than
rule government for the failure of a given lexical item to trigger the
application of some rule that has paralyzed my own research in this, and
I would now like to discuss in detail why this is such a problem, if only
to warn the unwary.

There are, given the descriptive devices available to us in 1976, at
least six a priori possible "explanations" for the failure of a given
lexical item W to trigger a certain syntactic rule R in a certain   sentence
token T.

1) ARBITRARY EXCEPTION: R is governed by a lexically specifiable
class (i.e. an arbitrary list) of lexical items, of which W is not a
member. Thus W never governs R. This sort of treatment is best ex-
emplified by G. <u>Lakoff</u> 1965, where lexical items were treated as each
bearing an indication of whether it was 'marked' or 'unmarked' for every
(relevant?[6]) rule in the grammar (actually for both whether the structural

description (SD) of the rule had to or could be met, and whether the rule had to or could apply if its SD was met). There were proposed meta-rules which interpreted these markings as indications that the particular rules could, had to, or had to not apply when the lexical item occurred in some presumably specifiable relation (this is never made precise) to the domain of the rule. Thus, hit is unmarked for Passive, which means that Passive must apply to clauses whose main verb is hit when the SD of Passive is met,[7] while rumor is marked for the SD and unmarked for the rule, which means that the SD for Passive must be met, (and therefore, Passive must apply), and verbs like have, cost and resemble would be marked for both the SD and the rule, which was interpreted by the meta-rules as meaning that the SD must not be met, and therefore the rule must not apply.

2) SEMANTIC-CLASS GOVERNMENT: R is governed by a semantically specified class of lexical items, and the meaning of the form W as used in T does not put it in that class. W governs R only when it has a certain sense S.[8] This is the account of rule government proposed in Green 1974, where, for instance, Negative Transportation was described as applying to non-factive verbs of mental state. Thus it applies to imagine in the sense 'expect' and to desire in the sense 'want', but not to imagine in the sense 'pretend' or to desire in the sense 'wish' since these senses are not non-factive, but counter-factive. Likewise, it applies to anticipate in the sense 'expect' but not in the sense 'foresee', which is factive.

3) PRAGMATIC TRIGGERING: R is triggered [I do not know if we should try to extend the sense of govern as far as it would have to go to cover this case. Cf. Green 1976 for commentary] by the pragmatic purpose P which the user of T has in mind to accomplish with T. W can only be said to be involved in the triggering of R when it occurs with other words, and in constructions, which are compatible with P. In the case at hand, we would say that R failed to apply because W was not being used in an attempt to accomplish P.

This situation seems to be well-exemplified by the distribution of expressions like the hell (the heck, in tarnation, and a host of others of varying degrees of profanity and scatology) after interrogative words, if we take these expressions to be introduced by a rule, as seems plausible. I am not prepared to give a definitive description of their distribution, but I know that in this case it is in fact impossible to describe a lexical class which governs the distribution of WH-the hell expressions (or the rule of the hell-Insertion, if you prefer), in terms of lexical items or semantic classes of them. One of the principles that determines the appropriateness of the hell with interrogatives is the condition that the speaker be ignorant of the answer to the question that corresponds to the Wh-the hell clause. Thus the appropriateness of the sentences in (1-5) is not a direct function of lexical items which allow "the hell-Insertion" (e.g. ask, tell, know, etc.); negation, adverbs, modals, choice of subject, and a host of other structures which can combine to reflect the speaker's ignorance interact with the meaning of these lexical items to determine the appropriateness of the hell in a particular case.

1a.   *They told me who the hell did it, but I won't tell you.
1b.   They told me who the hell did it, {but I can't remember who it was.
                                           {damned if I can remember who they
                                           said.

2a. ??Ask me who the hell it is.
2b. Don't ask me who the hell it is.

3a. ??She knows who the hell it is.
3b. Maybe she knows who the hell it is--I sure don't.

4a. ??Someone knows where the hell the barrette is.
4b. Someone must know where the hell the barrette is.

5a. Only he knows where the hell it is.
5b. ??Only I know where the hell it is.

The rule of "the hell-insertion" does not apply very acceptably in sentences (1a-4a, 5b) because they imply that the speaker is not ignorant of the 'value' of the WH-word, i.e., the answer to the corresponding real WH-question.

    4) UNDERLYING STRUCTURE CONSTRAINT: Regardless of whether the meaning of W is such that one would expect it (by account (2) or (3) to trigger R or be involved in the triggering of R, W is subject to a special underlying-structure constraint (USC) which prevents it from occuring in an underlying structure to which R could apply, or from which a structure could be derived which R could apply to. This is the sort of account Perlmutter (1971) gives for the apparent failure of verbs like scream to govern Equi-NP-Deletion.

    Perlmutter says that in underlying structure the subject of these verbs may not be the same as the subject of their complement; and indeed shows that in cases where a derived complement subject is identical to the subject of scream, Equi can in fact apply. This account contrasts not only with G. Lakoff's (1965) analysis which said that scream simply could not meet the SD of Equi or undergo the rule, regardless of how it occurred in underlying structure, but, strictly speaking, it also contrasts with a (pragmatic) account that says that for scream to have a subject coreferential to the subject of its complement is incoherent, and thus, the situation where it would be relevant to know whether or not it triggered Equi would never arise.[9]

    5) SURFACE STRUCTURE CONSTRAINT: Again, regardless of whether the meaning of W is such that one might expect it to govern R or be involved in the triggering of R, W is forbidden from occuring in any surface structure where it appears in the structure defined by the application (i.e. by the structural change) of R, regardless of which rule happens to be responsible for that structure in any given case.

    Clear examples of this may be found in Postal's (1974) description of B-raising (Raising to Superordinate Object Position) triggers. For example, Postal describes a number of B-triggers (e.g. allege, guess, guarantee, reveal)[10] as subject to a Derived Object Constraint (DOC) that forbids them from being followed by derived NP objects [11] in surface structure.[12] Thus sentences like (6) are unacceptable.

6a. *I guess John to weigh about 220 pounds.
6b. *They guarantee the refrigerator to work for 20 years.
6c. *They revealed John to have committed the larceny.

But when the direct object is removed syntactically from postverbal position, whether by a WH-movement or deletion, Topicalization, Passive, or

Heavy NP Shift, such sentences are acceptable. Thus all of the sentences in (7) to (11) are acceptable.

7a.   Who did they reveal to have committed the larceny?
7b.   What do they guarantee to work for more than 90 days?

8a.   John, whom they revealed to have been in prison at the time, was
      not called to testify.
8b.   The one I guessed to weigh 220 pounds only weighed 190.

9a.   Your cousin I would guess to weigh over 190.
9b.   The motor they guarantee to be free of defects in workmanship only.

10a. John was revealed to have been in California at the time.
10b. The motor was guaranteed to work for 20 years.

11a. They revealed to have been present during the transaction three
      known informers for the CIA.
11b. They guaranteed to work for twenty years all parts not made by
      slave labor.

    6) GLOBAL CONSTRAINT: There is a global constraint (GC) on the lexical insertion of W, to the effect that W can be inserted in a Phrase-marker M that meets structural condition A only if its corresponding phrase-marker M' meets some structural condition B at another, non-adjacent stage in the derivation of T. In the case at hand, the application of R would have caused condition A or B not to hold, thereby preventing the grammatical use of W. This is, of course, a real alternative to arbitrary exceptions, and not just a notational variant, only if there are rules besides R that would cause A or B not to hold, and evidence of their application is equally incompatible with the use of W. This account differs from the two preceeding ones (USC and SSC) in that neither A nor B refers necessarily to the levels of underlying or surface structure. Both A and B could conceivably be intermediate derivational stages, say, end of the cycle on W, and end of the cycle on T.

    I know of no really good examples of this. I claimed in my dissertation that the failure of Negative Raising to apply for some speakers with anticipate in the appropriate sense could be described as a global constraint on the insertion of the item anticipate, which said in effect that anticipate could be inserted only if Negative Raising did not apply to its node in that derivation. But this is equivalent to saying that anticipate is for such speakers an arbitrary exception to Negative Raising, and it was only because I wanted to characterize the notion 'exception', and formulate empirical constraints on the use of claims of exceptionality that I wanted to avoid saying "anticipate is negatively marked for the rule of Negative Raising".

    It should be becoming clear now why this plethora of available descriptive devices makes it so difficult to empirically test speculations like those made in Semantics and Syntactic Regularity. For suppose we have succeeded in describing as governed by a natural semantic class C some rule R at some stage t_o in the evolution of some language L (and to assume this is to assume a lot). If we find at some later stage t_1 no semblance of that orderly relation between meaning and rule triggering, before we can credit this to semantic drift in the evolutions of the lexical items

which were members of C at t_o or to a drift in the specification of C to C'
or to some combination of the two, we will need to find evidence which would
rule out explanations based on the development of USCs and surface structure
constraints (SSCs) and GCs on the members of C which would permit one to
claim that the members of C retained their t_o meanings and that the speci-
fication or definition of C did not change. And we would also have to
find evidence that R hadn't changed from being semantically governed to
being pragmatically triggered.

To put it another way, the more descriptive devices we have, the more
possibilities are a priori conceivable for syntactic change. Thus in
addition to the possibility of formal or structural "spontaneous" changes
in the structural description of a rule which increase or decrease its
range or domain, and changes in the structural specification of a rule which
alter it in some other way, and changes in the meaning of individual
lexical items and in the specification of the governing classes of governed
rules, we should expect to find cases of the loss or acquisition of USCs,
SSCs, and GCs, and we should expect to find semantically governed rules
becoming pragmatically governed and vice versa, separately, and in combina-
tion with one another. Whether or not these all occur, I am not prepared
to say, and because of the difficulties in finding evidence in dead lan-
guages for such phenomena as USCs, SSCs, and GCs, and evidence for the
exact meaning of a lexical item in the contexts where it is found, I am
not prepared, myself, to investigate this in the near future. But I
seriously doubt that the gain or loss of a level or global constraint could
occur spontaneously.

It seems more plausible that such changes, where they did occur, would
be set off by changes elsewhere in the system. For example, if the meaning
of a lexical item extended so that it fell within the governing class of
some semantically governed rule, it might for a while be an "exception"
to that rule in continuing to be restricted to the surface structure
positions afforded it by its original set of meanings. Depending on just
how much syntactic accomodation was made to the new meaning, this might
look like the development of a USC, SSC, or GC on the lexical item, or
even   an arbitrary exceptionality feature, if the non-applicability of
the rule no longer correlated with any synchronic aspect of the grammar,
and had to be learned by correction of error. I offer as anecdotal support
for a scenario like this an incident from my childhood. When I was about
8 years old, and I remember this very clearly, I consciously reasoned that
since people said I think so, and said I don't think so when they meant
I think not, they ought to be able to say I don't guess so when they meant
I think not since I guess could mean 'I hold the opinion' like I think, as
well as 'I speculate'. And on the basis of this, I began to say I don't
guess so, for I don't think so or I guess not, even though I had never
heard it. The significance of this is that since guess at least in the
1st person singular, present tense had come to mean 'hold the opinion'
but did not undergo Negative Raising, its meaning had changed before all
of its syntactic possibilities, and until my innovation had, for me and
those whose speech I heard, some sort of constraint on its use. At what
level or levels the constraint held, or whether guess was a simple excep-
tion, I am not prepared to say.

Conceivably, a sort of converse change could just as easily occur.
That is, change in the meaning of a lexical item could remove it entirely
from the semantic class governing a certain rule whose application it

regularly triggered formerly. But if the meaning can change before the
syntactic properties catch up, then the lexical item might continue to
trigger the rule, even though no longer a member of the semantic class
which regularly governed application of the rule.[13] I had thought that a
possible case of this might be claim,which in the sense of 'assert' triggers
Equi-NP-deletion under certain circumstances (e.g. when the embedded verb
is stative, past, or present perfect[14]) to derive an infinitive complement
since no other verb which means or implies 'assert' may trigger this kind
of Equi even under these circumstances.[15] Thus (12a) is grammatical, but
(12b-1) are not.

12a.   John claims to know Greg Allman.
12b.   *John says to know Greg Allman.
12c.   *John asserts to know Greg Allman.
12d.   *John declares to know Greg Allman.
12e.   *John denies to know Greg Allman.
12f.   *John proclaims to know Greg Allman.
12g.   *John announces to know Greg Allman.
12h.   *John implies to know Greg Allman.
12i.   *John mentions to know Greg Allman.
12j.   *John explains to know Greg Allman.
12k.   *John insists to know Greg Allman.
121.   *John swears to know Greg Allman.

I was under the misapprehension that claim originally meant something like
'profess falsely' or 'assert without foundation' as pretend did (whose
sense 'feign' is apparently rather new if citation dates in the OED are to
be trusted), and that claim retained the syntax natural to it in the sense
'pretend', even after it came to mean only 'say' though it retained a hint
that what was said might not be trustworthy. However, the sense of 'assert'
has apparently been with claim as long as it has been an English word
(1st OED citation is "c. 1330"), and the first citation for the comparable
sense of pretend is nearly a century later. One should not attach too much
significance to the lack of an earlier citation, for the point remains that
the modern sense and usage is apparently original with claim, and not the
result of a change in meaning before syntactic properties caught up.
     A second hypothesis I entertained (and which entertained me!) briefly
was that verbs of saying originally all permitted Equi, and that claim
retained this syntax because it permitted Equi in its other, now obsolete
sense ('demand'). If true, this would be a somewhat less direct case of
the meaning changing and leaving the syntax intact, but a case nonetheless.
However, if the OED is to be trusted, say did not characteristically take
Equi, especially in the 14th century--the only citation is from the six-
teenth century. So claim is probably not an example of fossilized syntax,
and its syntax, which probably not coincidentally it shares with profess
and purport, and I am told, allege,[16] remains a mystery. One might suppose
that these form a natural class of verbs meaning 'assert' which have impli-
cation that what is asserted is not to be taken as true. But unless this
implication has been lexicalized, and is not purely pragmatic, one would
expect the same 'the lady doth protest too much' principle which catalyzes
the inference of possible deceit or incorrectness, to hold for verbs like
swear, aver, maintain, contend, and insist, and cause them to permit Equi
too, but in fact, these do not allow Equi.

All of the change scenarios I have discussed have involved changes
from a regularity at one level to another at the same level (change in
the meanings of lexical items which result in a change in the member-
ship of C, changes in C to C', change from semantically governed to
pragmatically governed or vice versa) or to a regularity at a different
level (genesis of level or global constraints on individual lexical items).
Another sort of possibility exists that doesn't fit exactly into either
category. I have in mind the situation where some surface arrangement A
acquires a semantic value V of its own, perhaps by association with one
or more of the possible sources for that arrangement. The semantic value
will probably always be a pretty subtle one, but such a development could
have the effect of encouraging more verbs to allow an alternation between
this form and some other which they already governed just so that advantage
could be taken, pragmatically, though less than consciously, by speakers,
of the subtle meaning difference. This would show up, on the one hand, as
cases of verbs coming to govern A (in the traditional sense[17] of govern)
which previously didn't, and on the other, as cases of verbs which had
previously obligatorily triggered some rule whose output was A, coming
to do so only optionally, though we needn't suppose that all such verbs
would--the alternative to A, once A has taken on a semantic value, might
be incompatible with the meaning of the verb.

A possible example of this may be seen in some facts described in Riddle
(1975). Riddle observes that sentences with infinitive complements, whether
generated by Equi-NP-Deletion, A-Raising, B-Raising, or other rules, reflect
the speaker's evaluation that there is an especially close connection be-
tween the subject of the governing verb and the state or event referred to
by the complement, while sentences with that-clause complements are neutral
in this regard, and reflect no such evaluation of closeness. In other words
the greater syntactic cohesion found with infinitive complements reflects
a greater semantic or pragmatic cohesion.[18] Riddle demonstrates this dif-
ference first with the activity vs. state distinction illustrated in (13-14):

13a. Jane pretended to be an acrobat.
13b. Jane pretended that she was an acrobat.
14a. Jane remembered to be on time.
14b. Jane remembered that she was on time.

The infinitive phrases in the (a) examples describe an activity in which
the referent of the subject of the main clause is an active participant:
the that-clauses describe states which the subject of the main clause may
mentally manipulate or react to. She goes on to illustrate this 'value'
of the infinitive complement with the personal opinion vs. accepted fact
distinction found in (15-16), and with a closely related involvement/dis-
engagement distinction as shown in (17). In (15) and (16) the complements
in the (a)-examples are understood as reporting the subject's opinion (or
the speaker's, if the underlying subject of the governing verb is abstract),
while the (b)-examples are taken as reporting unbiased, independently
attested 'fact'.

15a. Jane found her to be obnoxious.
15b. Jane found that she was obnoxious.
16a. He happens to be a real creep.
16b. It happens that he's a real creep.

In (17a) the infinitive complement indicates an actual interaction between
the subject of ask and the personal (indirect) object, which is to say, the
understood subject of leave, while (17b) leaves it open whether the referent
of the subject of ask interacted personally with the subject of leave.

17a.   Jane asked him to leave.
  b.   Jane asked that he leave.

The use of <u>demand</u>, Riddle claims, as opposed to <u>ask</u>, implies that the
subject of <u>demand</u> has sufficient authority that she can be presumed to be
able to have her wishes conveyed without getting personally involved. Thus
it is somewhat contradictory to use <u>demand</u> with an infinitive complement, as
in (18a).[18]

18a.   *Jane demanded him to leave.
  b.   Jane demanded that he leave.

   Now you may wish to quibble with some of Riddle's examples, and perhaps
even with some of her reasons for why they are as they are, but it is not
important if the distinction she draws is not everywhere evident. The dis-
tinctions are relevant as an illustration of the situation I described in hy-
pothetical terms as long as there is a consistent direction to the difference
where it does occur, i.e. as long as, whenever there is a difference in
meaning between an infinitive complement to some verb, and the corresponding
<u>that</u>-clause complement (even when, as in the case of (13-15) there maybe some
 reasonable doubt as to whether the homophonous verbs are actually the same
verb anymore), it is the infinitive complement which implies more involve-
ment of the referent of the subject of the governing verb in the state of
affairs described in its complement.

   Historically, it may turn out to be the case that certain verbs which
at an earlier stage did not allow Equi or Raising came to do so--were
pushed by speakers to do so---so that speakers could exploit a difference
between infinitives and <u>that</u>-clauses that showed up elsewhere in the system.
Likewise, where Equi or Raising may have been obligatory for some verb,
this kind of pressure might have been sufficient for it to become optional,
so that speakers could take pragmatic advantage of the resulting <u>choice</u> of
forms.

   As I mentioned earlier, one needn't expect all verbs which might have
been candidates to have experienced such an increase in syntactic freedom;
the implication of one complementizer might be incompatible with the meaning
of the verb. We saw such an example with <u>demand</u>, above, and Riddle gives
more, for instance those in (19-20).

19a.   Jane tried to be a parachutist.
19b.   *Jane tried that she was a parachutist.
20a.   *Jane denied/imagined to be a spy.
20b.   Jane denied/imagined that she was a spy.

Sentence (19b) is not possible, she claims, because the complement of <u>try</u>
has to refer to an activity, not a state, and the <u>that</u>-complement refers
to a state. (Thus if someone were to say Jane tried to be tall he would
be taken as meaning that Jane had attempted to perform some controllable
activity describable as 'being tall',like that involved in being, say, brave).
The sentences in (20a) are impossible because verbs like <u>imagine</u> and <u>deny</u>
refer to mental and linguistic activities that 'manipulate' <u>propositions</u>,
the infinitive complement is associated with an activity, and propositions
are not activities.

   Having shown what I consider to be the formidable obstacles that must
be overcome simply to exemplify an almost obvious claim about possible rule
changes, I would like to spend a little time outlining what I think are
really challenging questions about rule change, whose answers can contribute
substantially to a theory of universal grammar, and to an eventual account
of what man brings biologically to the learning of a first language. I have
in mind three questions concerning the stability of the properties of 1)

governedness, 2) exclusion of an essential syntactic variable, and 3) effecting a change in grammatical relations, as these three properties have been linked, mainly informally (cf. Green 1973), by linguists studying one or more of them. That is, it has been observed that governed rules tend to change grammatical relations and contain no variables, and vice versa. The three questions are:

I. Can a rule change A) from being governed to being ungoverned, or B) vice versa.

II. Can a rule change from applying within a clause or across one clause boundary, to applying over a variable expanse of structure, or B) vice versa?

III. Can a rule change from being a relation-changing rule to being a non-relation-changing rule, or vice versa?

The answers to (I) depend, obviously on how we define governed, something I am not ready to do. If we equate with government the property of non-blind applicability, then presumably the answer to both (IA) and (IB) is yes; (IA) represents regularization of idiosyncracy, and (IB) represents the development of idiosyncracy (e.g. by acquisition of a SSC). If we define governed rules as those which apply to semantically-defined classes of items, then both changes seem very unlikely. If we take government to include pragmatic specification of the environment in which the rule applies, (IA) seems very unlikely, but (IB) not so, especially given possibilities like that outlined on pp.160-161. Thus, how we define government will determine in a fairly transparent way whether or not (I) is an interesting question to ask, with answers that will tell us something important about the basis of language, or not.

In Semantics and Syntactic Regularity, I argued for a view of rule government which entailed that governed rules differed formally from ungoverned rules only in that the structural descriptions of the former contained explicit references to meaning. I interpreted this (p. 61) to mean that change in governed rules of the sort R. Lakoff discussed (extension and reduction in scope of the relevant meaning-class specifications) would be typologically no different from other changes in the structural descriptions of rules, governed or ungoverned. This almost begs the question of whether governed rules can become ungoverned, by saying that they are not very different to begin with. But to the extent that it distinguishes them, it certainly allows the possibility, as much as any other theory, that a rule could become (or cease to be) governed.

A 'yes' answer to either of the clauses of II would greatly weaken the intuitively plausible case for a universal grammar consisting of a fixed (and relatively small, compared to the number of rules in a natural language) inventory of explicit rules (cf. Bach 1971). To propose such a universal grammar is to say that in general one will find the same rules in natural languages, no matter how unrelated, and that languages will differ mainly in lexicon and morphology (including SSCs), relevance of things like the Keenan-Comrie (1972) Accessibility Hierarchy, and perhaps in pragmatic conditions on rules, though these last ought to be fairly trivial differences if the pragmatic conditions have pragmatic motivations.[20]

A 'yes' answer would predict, for instance, that just as there are languages that can relativize only subject NPs, there could be a language

which could relativize only NPs in the highest clause of the relative
clause, or a language which could only question NPs in the clause imme-
diately commanded by the question trigger, so that (21) and (22) would
be grammatical, but (23) and (24) would not be.

21. Who said that Sam had left?
22. Who(m) did Bill expect to say that no one had voted for Ron?
23. Who did Sam say had left.
24. Who did Bill expect Sonia to say that she had voted for?

Likewise, it would predict that, say, Subject Raising could in some
language raise a subject from indefinitely far down a tree, instead of
from the immediately commanded clause, to become the subject of verbs
like appear, begin, and be likely.
    The in-principle most promising case I can think of for investi-
gating this involves the rule of Tough Movement (TM), the rule which is
ultimately responsible for the venerable John is easy to please. Since
it has been claimed on the basis of sentences like (25) (e.g. in Berman 1973),
that TM involves a variable, though a weak one, since sentences like (26)
are nowhere near as acceptable, it is tempting to interpret this weakness
as an indication that TM is still 'becoming' a variable rule.

25a. John will be impossible to get Mary to invite to the party.
25b. That book will be impossible to persuade the class to try to read by Friday.
26. This book is impossible to persuade John that he should read.
However, it turns out that TM is a most difficult rule to investigate
cross-linguistically, because the morphology of both the governing item
and the affected verb vary so widely. There is surprising agreement, how-
ever, from preliminary investigation, on the specification of the victim
(non-subjects) and on the semantic characteristics of the governing item.
Thus, what is in English:

$$NP_{ex-Non-Subject} \; \underline{be} \; ADJ/N_{'easy'-class} \quad ACTIVE \; INFINITIVE \; VP$$

may show up in other languages as:

a. $NP_{ex-Non-Subject}$ BE $ADJ_{'easy'-class}$ PASSIVE INFINITIVE VP

b. $NP_{ex-Non-Subject}$ BE ADVERB PASSIVE INFINITIVE OR
    $'easily'$-class SUBJUNCTIVE VP

c. $NP_{ex-Non-Subject}$ ADVERB FINITE PASSIVE OR
    $'easily'$-class REFLEXIVE VP

d. $NP_{ex-Non-Subject}$ ADVERB FINITE ACTIVE VP
    $'easily'$-class

Type (a) is found in Latin, Type (b) in Albanian and Latin, and Type (c)
in Russian. Types (c) and (d) also show up in English in forms like

(27) and (28).
27. John is easily pleased.
28. This book reads easily.

It remains an open question how these sentences are related to ones like
John is easy to please, within the grammar of English, and whether all of

these forms really involve the same rule of TM is still difficult to say. In addition, since English TM manifestly does not wrench its victim from a finite clause, as shown by the unacceptability of (26), it is easy to equivocate on the claim that any TM involves a variable, and say instead that since no plausible case involves a finite clause, there are no clause boundaries in the cases where it does apply (e.g. to claim that to persuade the class to try to read by Friday involves no subordinate clauses) and thus, TM is not a variable rule.[21] But this really is an equivocation, because if there is no limit to the length of the distance within the single, right-branching verb phrase, over which an NP may be Tough-Moved, then TM is still a variable rule.[22]

If the answer to III is 'yes', then it would be possible for a rule like English passive, for example, to cease to be a rule which promoted direct objects to subjects (assuming for the moment the Relational Grammar analysis of Passive) and come to be a rule which merely moved direct objects to clause-initial position, leaving their direct object status intact. And it would be equally possible for a rule like English "Topicalization" or Y-Movement to cease to be merely a fronting rule, and become instead a subject-creating rule. I think that Postal and Perl-mutter's Relational Succession Law[23] predicts that it would not do this without shrinking in scope: subject-creating ascensions from a lower clause must, according to the RSL, create subjects from only subject complements. And since Ross' sentential subject constraint prevents Topicalization from applying to sentential subjects, it would fall to-gether with subject-raising-to-subject (A-raising), Tough Movement, and Passive, if Postal and Perlmutter are right. In this case, it might un-dergo further shrinkage, as all of these are governed rules, and A-raising and TM are governed by classes which are very small relative to the number of verbs that occur in the syntactic environment required for the rule to apply. The alternative would be that the governing classes of all of these rules would enlarge to accomodate what was left of Y-Movement after the filter imposed by the RSL and in effect, become ungoverned---a truly mind-expanding idea to someone who has been thinking about governed rule change in the terms R. Lakoff and I sketched some years ago, but in principle, I suppose, not much less plausible than the kind of changes Riddle's observations suggested might occur.

The three questions I have raised are empirical questions,[24] whose answers are not in the least obvious. The task of providing definitive and properly qualified answers to them will require many linguists and many years.

These are important questions because of their implications for universal grammar, and for a linguistic theory that properly relates the "organism" of language to the organization of the human mind, and to the linguistic be-havior (in a very broad sense) of human beings.

If all of the changes described turn out to be impossible, we can deduce from that fact the existence of very strong, surfacy constraints that we could point to, on what could be a natural human language. The descrip-tion of universal grammar could be wonderfully explicit, practically down to particular, explicit (transformational) rules: languages might differ only in matters like the precise definition of the governing classes for particular rules, and the specification of relevant points on accessibility hierarchies of the sort proposed by Keenan and Comrie.

Even if not all of those changes turn out to be impossible, there will certainly still be constraints, the description of which should lead to the possibility of formulating constraints on universal grammar at a more general

level, and which should shed even more light on the nature of the equipment man brings to the 'task' of learning a language.

FOOTNOTES

[*]This paper was presented in this preliminary version at the Symposium on Mechanisms of Syntactic Change, Santa Barbara, California. I am grateful to J. Morgan and E. Riddle for illuminating discussion of some of the matters treated here.

[1]This is not to imply that I consider syntactic change in general to be relatively easy to investigate; I consider it to be in principle almost paralyzingly difficult, because of the severe limits on the availability of necessary data.

[2]The status of claims of cross-linguistic identity for particular rules, which are implicit in the work of many grammarians, and not a few linguists, is taken up in the work on relational grammar by Johnson (1974a,b) and an attempt is made at formalizing a universal rule for one governed rule, Passive. Indeed, the desire to be able to formulate such rules is one of the motivations for a relationally based theory of grammar.

[3]The terms are used as in G. Lakoff 1973, where they are not defined very precisely (either). Basically, I take a controller to be an element on constituent to which some other specified item (usually the victim) must be identical or coreferential for the rule to apply; I take a trigger to be an item (most often a predicative element) whose presence is necessary in a specifiable relation (command will no doubt be part of it) to controller and victim for the rule to apply, regardless of whether it is directly affected by the rule (usually it is not). I take a victim to be an item (usually an NP) which is deleted, moved, or altered somehow by the rule.

[4]This contrasts in interesting ways with the view of universal grammar similar to that expressed in Bach 1971a,b where all "major" transformations are hypothesized to be identical:

One particularly strong and simple hypothesis is that there is a fixed finite list of major transformations made available to every language by the general theory. This idea is implicit in traditional crosslinguistic identifications of construction types like relative clauses, passive, conjunction, or imperative. (1971a,p.7)

Unfortunately, fruitful comparison of these hypotheses requires an interpretation of major and made available (is there only 1 Universal Relative Clause rule, or a small number?) and this has not been provided.

[5]On pp.158-160 of the present work, I discuss the possibility that while change proceeds regularly, and semantic classes, not arbitrarily marked lexical items, govern rules, the meaning of a lexical item could change faster than its syntactic properties could, so that it would for a time appear as an exception.

[6]It isn't made clear what rules are mentioned for which lexical items. I would hope that the system would not force one to have to say things like "horse is unmarked for the rule of Passive"---that is, that the presence of the noun horse in a clause does not prohibit the application of Passive.

[7]Apparently Lakoff meant for Passive to be an obligatory rule, applying when some (arbitrary) Passive structure was present; if Passive were optional, the existence of verbs like have, resemble, cost, etc. (which Lakoff cites early in the work) would have to be considered Negative Exceptions to Passive (items which could meet the SD, but could not undergo the rule), and Lakoff claims that he could find no examples of Negative Exceptions to optional rules.

[8]I am ducking the issue of whether W is polysemous or represents homophonous but distinct lexical items. To deal with it would complicate matters, but it wouldn't change them significantly.

[9]Actually, the case for an underlying structure constraint on scream is very weak (as it is for USCs requiring 'Like-subjects' for verbs like try and condescend); Perlmutter very commendably provides most of the ammunition for an attack on his account of scream in footnotes to his argument. The case he presents for a like-subject USC on verbs like namjerava 'intend' in Serbo-Croatian is much stronger (but also easier to interpret pragmatically, as with scream). I only mention scream because it more closely parallels the government problem in the form I stated it. Since the distributional difficulties with namjeravati do not involve governed rules, it is not as immediately relevant. But if even one instance of a USC is justified for any natural language at all, then it is an available descripti device, and can be exploited (and indeed, expected) to account for the exceptional behavior of some verb with respect to some governed rule in other languages.

[10]Postal lists more than two dozen (1974:305). The list will no doubt vary idiosyncratically from speaker to speaker. At least three items on Postal's list, know, think, and understand, are not subject in my speech to the constraint as Postal states it.

[11]Except for "empty" pronouns like $there$, 'weather'-it, and Extra-position-it, and even these are often of dubious acceptability. Thus (i) and (ii) are a little better than (6), but worse than (7-11).
  i. I guessed it to be below 20^{0} outside.
  ii. They revealed there to have been an explosion.

[12]Actually this is a global derivational constraint in sheep's clothing: it prohibits derived object NPs in object position; underlying NP objects may remain in object position, as evidenced by the grammaticality of (i-iii)
  i. He revealed an error in the analysis
  ii. They guaranteed the motor for three years.
  iii. They revealed/guaranteed that no one would be allowed to enter the crypt.
The point remains that a constraint on surface structure, even a derivationa one, may make it appear at first that a verb fails to trigger a certain rule and in other cases may provide an explanation for the fact that the verb doe fail to trigger the rule.

[13]Such a case, I should point out, implies the need for at least partially arbitrary rule government if the description is to treat the language as a static system. The only less arbitrary alternative to rule features that I can see, and it's not much less arbrtrary, is to say that such lexical items behave as if they were members of the relevant semantic class with respect to individual rules, in which case, it would be necessary to list the rules only if the lexical item lost the syntactic freedom afforded by each at different times. In an account which takes no cognizance of language history this sounds more ad hoc than rule features, which by their nature are ad hoc.

I suppose that my suggesting that a linguist attempting a synchronic grammatical description might want to concern himself with the history of the language could be interpreted as indicating that I am a sort of linguistic reactionary, a counter-revolutionary tilting at the seventy-year old Saussurean Revolution. But I am not saying that language history should be part of the grammatical description, only that some apparent irregularities in it may have historical explanations rather than synchronic ones. Such explanations must be equally empirical, though they may be more difficult to actually falsify, for reasons of the sort I sketched at the beginning of this paper.

[14]Thus, (ia, iia, and iic) are grammatical, but the examples in (ib) and (iib) are not.

ia. John claims to see Bill/like potatoes.
ib. *John claims to hit Bill.
iia. John claims to have hit Bill in 1943.
iib. *John claims to have already left when Jim arrived.
iic. John claims to have gotten 1100 votes already.

Compare (iiia-c), which indicate that the verb phrases in (iia),(iib) and (iic) are embedded pasts, past perfects, and present perfects, respectively.

ii I hit/*have hit Bill in 1943.
ii I had already/*have already/*already left when Jim arrived.
ii. I have gotten/*got/*had gotten 1100 votes already.

[15]Deny, mention, insist, and possibly explain do permit an   -deletion rule to derive gerund complements, with either active or stative verbs, as in (i-iv), although none of the other verbs permit any kind of subjectless gerund complement, so this is an entirely separate issue.

i. John denied knowing/meeting Greg Allman.
ii. John mentioned knowing/meeting Greg Allman.
iii. John insisted on knowing/meeting Greg Allman.
iv. ?John explained knowing/meeting Greg Allman.

[16] Except for purport, all of these have Equi optionally. For purport, Equi is obligatory.

[17]This traditional sense is seen in the following quotations from grammars by Sweet and Fowler:

When a word assumes a certain grammatical form through being associated with another word, the modified word is said to be governed by the other one, and the governing word is said to govern the grammatical form in question. Thus...in I see him, him is governed by see, and see is said to govern the objective case him. In I thought of him, the form-word of also governs the objective case.

(Sweet 1892: 34-35)

Government is that power which one word has over another in directing
its Mode, Tense, or Case.

(Fowler 1868:511)

[18]Additional support for such a connection may be found in Borkin (1973,
1974). .

[19]Apparently this is so even if the 'demander' does get personally in-
volved; Jane's demanding that Y leave by saying to him "Get out of my
sight!" is still reported by (18b) and not by (18a).

[20]I do not necessarily hold this position. The Topic-prominent lang-
uages and the languages of the Phillipines, from what little I know about
them, seem so different to me from Western languages, that I am willing
to believe that all languages are not "cut from the same pattern", so that
Western languages would not be likely to develop the kinds of rules one
finds there, without the development of communicative strategies and pres-
sures parallel to those which caused or allowed such languages to be or
become the way they are.

[21]Berman's explanation for the unacceptability of (26) was that Tough-
Movement cannot move an NP over a subject. Since it cannot move subject
NPs, it follows from this that all acceptable cases will involve chains
of (non-finite) phrases, rather than clauses, as English does not allow
embedded (finite) clauses without overt subjects.

[22]The same argument cannot be made for Equi/Super-Equi (cf. Grinder 1970)
exemplified in (i) and (ii), if languages are found which have only Equi
(deletion of a complement subject of an immediately commanded clause), since
Super-Equi can cross clear clause boundaries, as in (ii).
  i.   John wants to bide his time.
  ii. John wants it to be obvious that it will be necessary to bide
       his time.
However, because of differences in governing-class, it is not so clear
that Equi and Super should be considered the same rule. That is, forwards
Equi is, as is well-known, governed by a subset of the verbs which take ob-
ject complements. (Backwards Equi, into subject complements, does not seem
to be governed.) Super, on the other hand, does not seem to be governed
at all, in that the verb to whose subject the victim must be coreferential
can be any verb which takes an object complement. Thus:
iii. *John considers to be biding his time.
iv.   John considers it obvious that it is necessary to bide
      his time.
v.   *John announced to have left his own car in L.A.
vi.   John announced that it was unlikely that it would be
      necessary to leave his own car in L.A.
Thus it is less plausible to consider Equi as a rule which applies over
an essential variable, encompassing Super, than it is to consider Tough-
Movement a variable-containing rule.

[23]This law provides that an NP promoted to a higher clause by an Ascension
rule assumes the grammatical relation borne by the host out of which it
ascends.

[24]Assuming that adequate, non-trivial definitions can be given for government and relation-changing (and for essential syntactic variable, for that matter, if need be. I have assumed that it has been adequately defined, e.g. in Postal 1971). I have discussed in detail the problem of defining government elsewhere (Green 1976).

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NOUN PHRASE ACCESSIBILITY AND ISLAND CONSTRAINTS

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In this paper we define two approaches to island phenomena: the Trans-formational Approach and the Accessibility Approach. Previously unreported cross-linguistic evidence - falsifying the former but consistent with the latter - is presented. In the first part of the paper we shall outline the two approaches, in the second part we shall present cross-linguistic evidence against the Transformational Approach, and in the third part we shall present evidence for the Accessibility Approach.

THE TRANSFORMATIONAL AND THE ACCESSIBILITY APPROACHES.

The existence has long been recognized of syntactic islands - configurations such as coordinate structures and complex NPs - which block the application of some syntactic processes. Since these were discovered, the exact nature of the constraints has been a matter of great interest. Until recently, investigators have attempted to explain island phenomena as constraints on particular types of transformational operations, such as movement or deletion. For example, Ross (1967) attempted to show that island constraints are universal restrictions which prevent transformations from carrying out the operations of movement or deletion over a variable. (We shall ignore putative feature-changing rules.) Perlmutter (1972) argued that Ross's apparent cases of constraints on movement should be reanalyzed as constraints on relative deletion, thereby reducing island constraints to constraints on a single transformational operation: deletion. We would like to emphasize the affinity between Ross's and Perlmutter's approaches. What is common to both is the attempt to define island constraints as constraints on some class of transformational operation, such as movement or deletion. We are not concerned with the very real differences between Ross's and Perlmutter's positions; we refer to their joint approach as the Transformational Approach to island phenomena.

Despite the impressive results obtained by the Transformational Approach, recent studies contain data suggesting that this approach is fundamentally inadequate. James (1972) and Morgan (1975) have noted phenomena in English that are sensitive to island constraints, but which seem, at least, not to be explainable in terms of constraints on particular classes of transformational operations. James notes that the referent of the exclamation ah cannot be in an island. Thus in (1):

(1) Ah, it is reported by Newsweek that Kissinger is a vegetarian!

which contains an extraposed sentential subject, ah can be an expression of surprise that Newsweek made a certain report, or it can be an expression of surprise with regard to the proposition reported. In (2):

(2) Ah, that Kissinger is a vegetarian is reported by Newsweek!

however, where the sentential subject has not been extraposed and hence is an island, ah can be interpreted only as an expression of surprise that

Newsweek made the report. It cannot be interpreted as surprise respecting
the content of the report. James provides similar examples which show that
ah cannot refer to material inside complex NPs or coordinate structures.
    Morgan shows that non-direct replies are sensitive to islands. In
reply to (3), (4) is felicitous, but (5) is not:

(3) Why was Angela arrested?
(4) The man who lives next door thinks she bought some guns.
(5) The man who thinks she bought some guns lives next door.

The infelicity of (5) as a nondirect reply to (3) seems to be due to the
fact that the relevant information (she bought some guns) is inside an
island - a complex NP - in (5). This is not the case with respect to (4).
Thus (4) is felicitous.
    Data like those reported by James and Morgan cannot be easily explained
in terms of constraints on movement or on deletion. In fact, they would
seem incompatible with any transformational approach.
    There is an approach to island phenomena which appears to offer an
explanation for the difficult problem noted by James and by Morgan. It is
the Accessibility Approach, the approach for which we shall argue here.
Following a proposal by Keenan (1972), we shall contend that island con-
straints apply only to processes having the effect, roughly, of making a
noun phrase the most prominent element in its clause. (Relativization,
Wh-question Formation, and Topicalization are instances of processes
which usually have such a function, regardless of the transformational
operations employed in these processes in particular languages.) The
question of which structures constitute islands is determined in terms of
a universal hierarchy of NP accessibility, an extended version of the
Keenan-Comrie hierarchy. (See Keenan and Comrie, to appear.) Keenan and
Comrie's hierarchy is reproduced in (6),

(6) The Universal NP Accessibility Hierarchy:
     a. Subject ≥ Direct Object ≥ Indirect Object ≥ Object of a Preposition ≥
     Possessor NP ≥ Object of Comparative Particle
     b. if X ≥ Y and Y dominates Z the X ≥ Z
     (≥ means 'greater than or equal to in accessibility'.)

Particular languages differ with regard to how far down on the hierarchy
processes like Relativization and Question Formation may go. According to
the Accessibility Approach, islands are islands simply because they are
very low on the Accessibility Hierarchy [presumably, lower than the posi-
tions in (6)]. NP accessibility is also affected by the degree to which
the strategies of relativization, etc., preserve superficial sentential
structure. Thus, if a language has two relativization strategies, a dele-
tion strategy and a pronoun retention strategy, the latter would allow the
relativization of less accessible NPs than would the former. For example,
in Modern Hebrew both deletion and pronoun retention are possible. The
Accessibility Approach would predict that pronoun retention would allow
the relativization of less accessible environments than would deletion.
This prediction is correct. Sentence (7) is ungrammatical when a relati-
vized NP in a conjoined structure is deleted. When a pronoun is retained,
however, as in (8), the sentence is fully grammatical:

(7) *Ze   hais   še   ø   veMirian   xaverim   tovim.
    this the   man   that and   Miriam   friends   good
    'This is the man that and Miriam are good friends.'
(8) Ze   haiš   še   hu   veMiriam xaverim tovim.
    this the man that   he   and Miriam friends good
    'This is the man that he and Miriam are good friends.'

CROSS-LINGUISTIC EVIDENCE.

We shall now turn to cross-linguistic evidence which is consistent
with the Accessibility Approach to islands but which is inconsistent with
the Transformational Approach of Ross and Perlmutter. The Ross-Perlmutter
approach makes two falsifiable claims, which are given as (9) and (10):

    (9) Relativization, Wh-question formation etc. will not be con-
    strained by island constraints unless the syntactic rule employed
    involves deletion or movement.
    (10) When a rule of relativization, etc., involves deletion or
    movement, island constraints always apply.

Note that (9) predicts that relativization strategies, in which the relati-
vized NP appears as a pronoun or as a full lexical noun phrase, would not
be affected by island constraints. Nor would questioned NPs when the
question strategy does not involve movement or deletion. The evidence to
be presented will show that both (9) and (10) are false.
    The evidence against (9) is based on data from Hindi, Kannada and
Mandarin. We shall consider the data from Hindi and Kannada first. The
Hindi data are drawn in part from the work of Kachru (to appear) and Bhatia
(1974); the Kannada data are derived in part from Nadkarni (1970).
    In Hindi and Kannada, there are two strategies of relativization, one
involving the deletion, the other the retention of the relativized noun
phrase (a full lexical noun phrase, not a pronoun). Following Nadkarni
(1970), we shall refer to the two strategies as the Participial and the
Nonparticipial Strategies. In the Participial Strategy, the main verb
in the relative clause is changed to a participle, and the coreferential
NP is deleted. This is illustrated in sentences (11a) (Hindi) and (11b)
(Kannada):

(11)a. Us   lərkī   kī likhī   huī kəvita   ø   əcchi hɛ.
        that girl of written   poem   good is
     b. Ā hudugi   ø   bareda kavite   cennāgide.
        that girl   written poem   good is
        'The poem which that girl wrote is good.'

In the Nonparticipial Strategy, Hindi allows three surface realizations
of the relative clause. In the realization with which we shall be concerned
[example (12a)], the relative clause precedes the head and the relativized NP
is retained in surface structure. In Kannada, relative clauses always
appear to the left of their heads. The relativized NP is retained on the
surface. This is shown in example (12b).

Nonparticipial Relative Clause:
(12)a. Jo   kəvita   us   lərkī ne likhī vəh ∅ əcchī hɛ.
        rel poem   that girl   wrote correl good is
    b. Yāva   kaviteyannu ā huḍugi bareḍalō adu cennāɡide.
        rel   poem   acc that girl wrote (enclitic) that good is
        'The poem which that girl wrote is good.'

In both Hindi and Kannada, when the Deletion Strategy is employed, all
the island constraints hold.
    Notice that in neither language does the Nonparticipial (or Retention)
Strategy involve movement or deletion. Yet the island constraints hold--
most of them in the case of Hindi, and some of them in Kannada--as the
following data illustrate. First, observe the following sentences from
Hindi.

(13) Complex NP (Relative Clause):
      *S_1 [jis admi$_i$ ne vəh sup$_j$ bənaya S_2[jo $\emptyset_j$ əccha hɛ]S_2]S_1 vəh $\emptyset_i$
       rel   man   ag correl soup made   rel good   is   correl
      bhaśavijnani hɛ.
      linguist   is
      'The man who the soup which is good made is a linguist.'
(14) Complex NP (Sentential Complement of a Noun):
      *S_1[jis kar$_i$ko S_2[yəh bat səc hɛ#ki gopal ne $\emptyset_i$ xəridi]S_2]S_1
        rel car postp   this news true is that Gopal bought
      vəh sundər hɛ.[1]
      correl pretty is
      'The car which the news that Gopal bought is true is pretty.'
(15) Co-ordinate NP:
      *$_S$[jis sofa$_i$ ɔr kursi ke bic me unhõne mez rəkha hɛ]$_S$
        rel sofa   and chair poss. between in they table placed have
      vəh $\emptyset_i$ purana hɛ.
      correl old   is
      'The sofa which they have placed a table between and a chair is old.'
(16) Coordinate VP:
      *$_S$[jo kahãniyã$_i$ sita likhti hɛ]$_S$ ɔr $_S$[kavita pərhti hɛ]$_S$
        rel stories   Sita writes aux   and   poems reads aux
      ve $\emptyset_i$ əcchī hoti hɛ̃.
      correl   good are
      'The stories which Sita writes and reads poems are good.'
(17) Coordinate S:
      *$_S$[jo kəhãniya$_i$ sita likhti hɛ]$_S$ ɔr $_S$[vəh patrikaõ ko kəvita
        rel stories   Sita writes aux   and   she magazines to poems
      bhejti hɛ]$_S$ ve $\emptyset_i$ əcchi hoti hɛ̃.
      sends aux   correl good are
      'The stories which Sita writes and she sends poems to magazines
      are good.'
While in the case of the islands illustrated above, the constraints hold,
Hindi does allow relativization into sentential subjects, using the
Retention Strategy.

(18) Sentential Subject:
      S_1[S_2[mera jo topi$_i$ lana]$_{S_2}$ əjib tha]S_1 vəh ∅ fransisi hɛ.
            my   rel hat bringing strange was correl French is
      'The hat which that I brought was strange is French.'

Hindi also permits relativization into complex NPs (relative clauses),
provided that the NP being relativized is contained within a participial
relative clause and that the Nonpartical Strategy is employed to relativize
the NP in question:

(19) Complex NP (relative clause):
      S_1[S_2[jis admi$_i$ ka ϕ_j bənaya]$_{S_2}$ sup$_j$ əccha hɛ]$_{S_1}$ vəh ϕ_i
            rel man   poss made soup good   is   correl
      bhasa vijnani hɛ.
      linguist   is
      'The man who the soup which is good made is a linguist.'

      A similar pattern is found in Kannada which also blocks relativization
into nonparticipial relative clauses, coordinate NPs, and coordinate
sentences [cf. (20)-(22)]. The difference between Hindi and Kannada is
that Kannada permits relativization into certain additional islands which
are inaccessible in Hindi. Thus, in Kannada one can relativize not only
into sentential subjects [cf. (23)] and relative clauses of the type
illustrated in (19) [cf. (24)], but into sentential complements of nouns
[cf. (25)] and of coordinate NPs [cf. (26)] as well.

(20) Complex NP (Relative Clause):
      *[yāva manushyanu$_i$ [yāva sūpannu avanu mādidanō] adu cennāgide ā
        rel man   rel soup acc he made enclitic that good is that
      manushya$_i$ bhāshā vijnani.
      man   linguist (is)
      'The man who the soup which is good made is a linguist.'
(21) Coordinate VP:
      *[yāva kategalannu$_i$ sīte bareyuttālō] mattu [kaviteyannu oduttale]
        rel stories acc Sita writes enclitic and poetry   reads
      avu$_i$ cennāgiruttave.
      they   good are
      'The stories which Sita writes and reads poetry are good.'
(22) Coordinate S
      *[yāva kategalannu$_i$ sīte bareyuttālo]$_{S_1}$ mattu $\dot{S}_1$[avala ganda
        rel stories acc Sita writes enclitic and   her husband
      avala kavanagalannu patrikegalige kalisuttāre]$_{S_2}$ avu$_i$ cennāgiruttave.
      her   poems acc   to magazines sends they   good are
      'The stories which Sita writes and her husband sends her poems
      to magazines are good.'
(23) Sentential Subject:
      [yāva kārannu gōpālānu kondanembudu   nijavō] adu sundarāvagide.
       rel car acc Gopal   bought that   true (is) enclitic that pretty is
      'The car which that Gopal bought is true is pretty.'
(24) Complex NP (Relative Clause):
      [yāva manushyanu$_i$ ϕ_i mādida sūpu$_j$ cennāgideyō] avanu$_i$ bhāsha vijnani.
       rel man   made soup is enclitic he   linguist (is)
      'The man who the soup which is good made is a linguist.'
(25) Sentential Complement of a Noun:
      S[yāva kārannu$_i$ gōpālanu kondanemba sangati nijavō]$_S$
        rel car acc Gopal   bought   that news true (is) enclitic
      adu$_i$ cennāgide.
      that good (is)
      'The car which the news that Gopal bought is true is good.'

(26) Coordinate NP:
    [yāva sōfa$_i$ mattu kurciya naduve avaru mējannu ittiddarō]
    rel sofa and chair poss between they table acc placed
    adu$_i$ haḷeyadu.
    have enclitic that (is) old
    'The sofa which they have placed a table between and a chair is old.'

Similar differences between Hindi and Kannada are found in wh-questions.
In both languages, Wh-question Formation does not involve movement or
deletion, but only the substitution of a question word for the questioned
constituent. But the island constraints hold in Hindi except in the case
of participial relative clauses and sentential subjects [see the (a) examples
of (27-(32) below]. Kannada, on the other hand, allows the questioning of
elements within coordinate NPs and complex NPs other than nonparticipial
relative clauses, as illustrated in the (b) examples of (27)-(32):

(27) Participial Relative Clause Question:
    a. kiski likhi hui kəhāniyā tumhe pəsənd hẽ?
        whose written stories to you liking is
    b. yāru bareda kategaḷu ninage ishta?
        who written stories to you favourite
        'The stories written by who do you like?'
(28) Complex NP (Sentential Complement of a Noun) Question:
    a. *yəh bat səc kɛ ki gopal ne kya xəridi?
        It news true is that Gopal ag.m. wh- bought
    b. gopālanu ēnu konda emba sangati nija?
        Gopal nom. wh- bought that news true
        'What the news that Gopal bought is true?'
(29) Sentential Subject Question:
    a. [gopal ka kya lana] əjib tha?
        Gopal poss wh- bringing strange was
    b. [gopālanu ēnu tandanembudu] vicitravāgittu?
        Gopal nom. wh- bought that strange was
        'What that Gopal brought was strange?'
(30) Coordinate NP:
    a. *sōfa or kiske bic mẽ unliõne mēz rəkha hɛ?
        sofa and what between they table placed have
    b. sofa mattu yētara naduve avaru mējannu ittiddāre?
        sofa and of what middle they table-acc placed have
        'What have they placed the table between the sofa and?'
(31) Coordinate VP:
    a. *sīta kya likhtī hɛ or kəhāniyā pərhti hɛ?
        Sita wh- writed and stories reads
    b. *sita yēnannu bareyuttāḷe mattu kategaḷannu ōduttāḷe?
        Sita what-acc writes   and stories-acc reads
        'What does Sita write and reads poems?'
(32) Coordinate S:
    a. *sīta kya likhtī hɛ or vɛh unko pətrikaõ kō bhējti hɛ?
        Sita what writes and she them magazines to sends
    b. *sita yēnannu bareyuttāḷe mattu avaḷu avannu patrikegaḷige
        Sita what-acc writes   and she them-acc magazines to
        kaḷisuttāḷe?
        sends
        'What does Sita write and she sends them to the magazines?'

    The Hindi-Kannada data constitute evidence for the falsity of (9)
because in these languages (some of) the constraints hold even though the
processes of Relativization and Question Formation do not involve deletion
or movement. It should be noted that the languages differ with regard to
which NPs can be relativized even though almost identical relativization
strategies are employed.
    We shall now turn to Mandarin. The analysis of Mandarin relativiza-
tion presented here is drawn from Chen (1974). Mandarin employs two
relativization strategies, one where the relativized noun phrase is
deleted, and the other where a pronominal token of the relativized noun
phrase is retained in surface structure. Deletion is usually obligatory
when the relativized noun phrase is the subject of the relative clause,
and optional (with deletion preferred) when it is the direct object.
Example (33) illustrates the relativization of a direct object.

(33) Zhe   jiushi Iwo zuotain kanjian $(\sqrt{?\phi}$ta) del neige ren.
     this is   I yesterday see $\{$he$\}$ RM that person
      'This is the man that I saw yesterday.'
     (The symbol $\sqrt{?}$ means that the sentence is awkward, slightly less
      than fully grammatical.)

When the relativized noun phrase is within a complement clause, pronoun
retention is preferred. This is true even when the relativized noun
phrase is the subject of the complement clause as in (34):

(34) Zhe jiushi [Lao Wang shuo $\left\{{?\phi \atop \text{ta}}\right\}$ hen xihuan tiaowu del neige ren.

     this is   Lao Wang say $\left\{{\phi \atop \text{he}}\right\}$ very like dance RM that person
     'This is the man who Lao Wang said that he loved dancing very much.'

    Having established that pronoun retention is a permissible relativiza-
tion strategy in Mandarin, we shall now consider the effect of pronoun
retention on the grammaticality of relativization into islands. Sentences
(35)-(38) are cases in point. Although all are ungrammatical, pronoun
retention improves their comprehensibility, while deletion leaves them
mere gibberish.

(35) Complement of Noun Head:
     *Zhe jiushi [Lao Wang chengren   [women dou kanjian $\left\{{\phi \atop \text{ta}}\right\}$ del

     this is   Lao Wang acknowledge   we   all see $\left\{{\phi \atop \text{he}}\right\}$ rel
     zheige shishi del neige ren.
     this fact rel that person
     'This is the man Lao Wang acknowledged the fact that we all saw him.'
(36) Relative Clause:
     *Zhe jiushi [[women dou hen zunjing $\left\{{\phi_i \atop \text{ta}_i}\right\}$ xihuan $\left\{{\phi_j \atop \text{ta}_j}\right\}$ del neige

     this is   we   all very respect $\left\{{\phi \atop \text{he}}\right\}$ like $\left\{{\phi \atop \text{she}}\right\}$ rel that
     ren$_i$ del neiwei nulaoshi$_j$.
     person RM that woman teacher
     'This is the woman teacher that we all respect the man who likes her.'

(37) Coordinate NP:
   *Zhe jiushi [wo zuotian   kanjian $\left\{{\phi \atop ta}\right\}$ gen Lao Wang de] neige ren.

   this is   I yesterday see $\left\{{\phi \atop he}\right\}$ and Lao Wang rel that person
   'This is the man that I saw and John yesterday.'
(38) Sentential Subjects:
   Ta   renshi [[Lao Li zuotian ma   le $\left\{{\phi \atop ta}\right\}$ shi wo hen

   she know   yesterday scold aspect $\left\{{\phi \atop him}\right\}$ make I very
   bu gaoxing de] nei ren]
   not happy   M that person
   'She knew the person whom that Lao Li scolded him made me very unhappy.'

We have presented evidence showing the falsity of (9). In Hindi,
Kannada and Mandarin, island constraints are not restricted to syntactic
rules of deletion and movement. These facts are compatible with the
Accessibility Approach but incompatible with the Transformational Approach.
   The second claim of the Transformational Approach [(10)] is that,
if relativization and similar processes involve deletion or movement,
island constraints should always apply. An examination of relativization
in Japanese, however, shows that this position cannot be maintained.
   Japanese relativization is effected normally by the deletion of the
relativized NP with its case marker, as illustrated in example (39).

(39) a. Watashi wa kinoo   uchi   o   mita.
            I   topic yesterday the house acc saw
         'I saw a house yesterday.'
     b. (Watashi ga   kinoo   ∅   mita) uchi   wa   asoko da.
            I   subject yesterday   saw   house topic there is
         'The house which I saw yesterday is there.'

In some instances of relativization of a possessor NP, a pronominal reflex
of the relativized NP must be retained:

(40) (Tom ga $\left\{{*\phi \atop sono}\right\}$ tomodachi ni   atta) Mary wa   asoko da.
         subject pro   friend   dat met   topic   there is
      'Mary whose friend Tom met is there.'

Pronoun retention is fully grammatical only with possessor NPs. Consequently,
the primary strategy of Relative Clause Formation in Japanese is deletion.
   An approach treating island phenomena as constraining Relative Deletion
would predict, therefore, that Japanese relativization would be sensitive
to island constraints. In fact, this is true in some cases. Japanese
relativization is blocked from applying into one member of coordinate NPs
joined by some conjunctions- [as in sentence (41a)]-although not in others
as in sentence (41b)[2]:

(41) Coordinate NP:
     a. *Kore wa [watashi ga ∅ ringo mo tabenakatta] banana da.
         this topic   I   subject apple or eat neg past banana is
         'This is the banana that I didn't eat or an apple.'
     b. [Watashi ga ∅ ringo to   tabeta] banana wa   oishikatta.
            I subject apple commitative ate banana topic delicious was
         'The banana which I ate and an apple was delicious.'

Under no circumstances is relativization possible into one member of a coordinate VP. Example (42) illustrates this constraint.

(42) Coordinate VP:
    *[Watashi ga ∅   yonda soshite terebi o mita] hon wa
      I   subject   read   and   T.V. acc saw   book topic
    omoshiroi.
    interesting (was)
    'The book which I read and watched T.V. was interesting.'

The fact that relativization is not possible into coordinate structures in Japanese would, assuming for the moment the correctness of Perlmutter's approach, require that an island—sensitive rule of deletion be assumed to exist in the grammar of Japanese. There are some islands, though, into which Japanese relativization can operate freely, including complex NP's. Relativization can operate into sentential complements of nouns as in example (43) (adapted from McCawley 1972),into relative clauses as in example (44) (adapted from Kuno 1973), and sentential subjects, as in example (45):

(43) Complex NP: (Sentential Complement on a Noun)
    [∅ shikakui to yuu·uwasa o   shinsite ita] chikyuu wa marukatta.
        square   say rumor·acc believe prog   earth topic round was
    'The earth which they believed the rumor that was square was round.'
(44) Complex NP (Relative Clause):
    [[∅ ∅ kawaigatte ita] inu ga   shinda] kodomo wa kanashi soda.
          pet past   prog dog subject died   child topic sad   looks
    'The boy that the dog that was petting died looks sad.'
(45) Sentential Subject:
    [[Anata ga ∅ au koto] ga   mazui   hito   wa
    you subject meet nom subject unfavorable person topic
    koko ni wa inai.
    here topic is neg
    'The person whom that you see is unfavorable is not here.'

If island constraints are constraints on specific transformational operations, then they should be expected to apply consistently to block such operations into all island configurations. In Japanese, however, in which relativization involves deletion in virtually all cases, it is possible to relativize into some syntactic islands, but not into others. The Transformational Approach, therefore, fails to account for the facts of Japanese relativization.

The Accessibility Approach, however, argues that island constraints are restrictions on making elements prominent from structures ranking low on the universal Accessibility Hierarchy. It predicts that there are degrees of islandhood, and that each language differs with regard to how far down the hierarchy it can go. This view is consistent with the evidence from Japanese relativization.

We have seen that Japanese constitutes a counterexample to (10). Modern Hebrew also contains counterevidence to (10). In Modern Hebrew, elements in sentential subjects may be relativized by the use of deletion or pronoun retention. But elements in complex NPs and coordinate NPs cannot be relativized unless a pronoun is retained. The possibility of

relative deletion within sentential subjects is a counterexample to (10).
Examples from Modern Hebrew are given in (46)-(48):

(46) Sentential Subject:
    a. Zot iša   še   leehov ∅ lo kidai.
       this woman that to love not worthwhile
       'This is a woman that to love isn't worth it.'
    b. Zot iša   še leehov ota lo kidai.
       this woman that to love her not worthwhile
       'This is a woman that to love her isn't worth it.'
(47) Complex NP:
    a. *Hine hakadur se kikiti et hayeled še zarak ∅ elai.
       here is the ball that I hit acc the boy that threw at me
       'Here is the ball that I hit the boy that threw at me.'
    b. Hine hakadur še hikiti et hayeled še zarak oto elai.
       here is the ball that I hit acc the boy that threw it at me
       'Here is the ball that I hit the boy that threw it at me.'
(48) Coordinate NP:
    a. *Ze haiš še Miriam ohevet ∅ veet axiv.
       this the man that Miriam loves and acc his brother
       'This is the man that Miriam loves and his brother.'
    b. Ze haiš še Miriam ohevet oto veet axiv.
       this the man that Miriam loves him and acc his brother
       'This is the man that Miriam loves him and his brother.'

We have presented data from Japanese and Modern Hebrew which show
that relativization strategies involving deletion are not always constrained
by island constrains. This contradicts claim (10) of the Transformational
Approach.

EVIDENCE FOR THE ACCESSIBILITY APPROACH.
    The bulk of this paper so far has been devoted to presenting cross-
linguistic evidence against the Transformational Approach. We believe that
the evidence we have presented is quite conclusive and that the Transforma-
tional Approach should be rejected. We have not, however, presented direct
evidence in favor of the Accessibility Approach.   Admittedly, the evidence
in favor of the Accessibility Approach is less conclusive than that against
the Transformational Approach, but we feel that the case for the Accessibility
Approach is persuasive.
    The Accessibility Approach makes two empirical claims. These are
summarized as (49) and (50):
      (49) Islandhood is a reflection of the relative inaccessibility of
          certain structures on an Extended Accessibility Hierarchy.
      (50) The preservation of superficial sentential form allows a rule
          access to structures which would otherwise be less accessible.
    A wide variety of data supporting (50) has been adduced by Keenan
(1972). The evidence from Mandarin cited earlier [(35)-(38)], constitutes
further support for (50). Pronoun retention is seen to increase the ac-
ceptability of relativization in islands, but not to the extent that the
resulting sentences could be considered grammatical. On the basis of (50),
this is not surprising, but such facts are incompatible with (9). We shall
assume that (50) has been established and thus turn our attention to (49).

Two claims are implicit in (49). The first is that island structures
vary in strength in a hierarchical fashion. The second is that this hier-
archy is a subhierarchy of an <u>Extended Accessibility Hierarchy</u>. There is
considerable reason to believe that islands vary in strength hierarchically.
Consider the relevant data from languages discussed earlier: Modern Hebrew,
Japanese, Mandarin, Hindi, and Kannada. We saw that in some languages,
relativization out of certain islands was possible by means of a deletion
strategy. In other cases, relativization was possible if an NP retention
strategy was employed, while in further cases relativization was impossible
regardless of the relativization strategy. The pattern of relativization
possibilities is summarized in (51):

(51)   Relativization Possibilities

	Sentential Subject	Complex NP	Coordinate NP	Coordinate VP and S
Deletion:	Hebrew Japanese	Japanese		
Rentention:	Hebrew Hindi Kannada	Hebrew Hindi* Kannada*	Hebrew Kannada	

*All complex NPs except nonparticipial relative clauses.

From (51) the gross outlines of an <u>island hierarchy</u> can be seen:

(52)   The Island Hierarchy
        Sentential Subject $\geq$ Complex NP $\geq$ Coordinate NP $\geq$ Coordinate VP and S

Note that there is no language in which, for example, relativization
out of sentential subjects is blocked regardless of the strategy employed,
but in which coordinate NPs are relativizable by deletion. The only anomaly
in the hierarchy which we have found so far is the fact that coordinate
NPs are more accessible in Kannada than are nonparticipial relative clauses.
But this may not be a true counter-example to our claims. Avery Andrews
(personal communication) has suggested that Nonparticipial relative clauses
are not syntactically subordinate to their heads, and, as a result, may not
be genuine complex noun phrases. Thus, on the basis of (51), we feel just-
ified in advancing the tentative claim that island strength varies hier-
archically along the lines of (52). This claim is strengthened by the
existence of English—specific evidence for an islandhood hierarchy
reported by Lakoff (1973) and Neeld (1973).[4]
        Finally, we would like to examine whether (52) is as we have claimed,
a relatively inaccessible subhierarchy of an Extended Accessibility Hier-
archy and not a separate hierarchy. The question can be approached only
in a negative fashion: that is, is there any evidence inconsistent with
the hypothesis that (52) is a subhierarchy of an Extended Accessibility
Hierarchy? For example, is there any language in which a relatively
accessible position on the Accessibility Hierarchy (such as indirect
object) requires a retention strategy, but in which some island structure
(much lower on the combined hierarchy than indirect objects) permits
relativization by deletion? The existence of such facts would suggest that
the Island Hierarchy and the Accessibility Hierarchy are distinct.

We are, in fact, aware of a case of this sort. But it will be seen that
it results from language-specific factors and thus is not a true counter-
example to the hypothesis. In Modern Hebrew, subjects and direct objects
may be relativized by deletion or pronoun retention. All other relativiz-
able environments, for example, indirect objects, allow relativization only
if a pronoun is retained:

(53) Subject:
    Ze   haiš   še (hu) maca et   hakelev   šeli.
    that (is) the man that   found acc marker the dog of mine
    'That's the man that found my dog.'
(54) Direct Object:
    Ze   haiš   še   hakelev   šeli   maca (oto) al hahar.
    that (is) the man that the dog of mine   found acc him up the mountain
    'That's the man that my dog found on the mountain.'
(55) Indirect Object:
    a. Ze   haiš   še   natati   lo   et   hasefer.
        that (is) the man that (I) gave dative him acc the book
        'That's the man to whom I gave the book.'
    b. *Ze   haiš   še   natati ø et   hasefer.
        that (is) the man that (I) gave acc the   book
(56) Oblique Case NPs:
    a. RNP with be 'in'
    i. Ze   haet   še ani   kotev bo.
        that (is) the pen that I   write in it
        'That's the pen I write with.'
    ii. *Ze   haet   še ani kotev ø
        that (is) the pen that I write
    b. RNP with al 'upon'
    i. Zot   hatmuna   še ani ohev   lehistakel   aleha.
        that (is) the picture that I   love   to look   upon it
        'That's the picture I love to look at.'
    ii. *Zot   hatmuna   še ani ohev   lehistakel ø
        that (is) the picture that I   love   to look

It will be remembered, however, that NPs within sentential subjects
may be relativized by deletion. The relevant example is repeated here as
(57):

(57) Zot iša   še   leehov ø lo   kidai.
    this woman   that   to love not   worthwhile
    'This is a woman that to love isn't worth it.'

On the basis of (53)-(57), it would appear at least in Modern Hebrew,
that elements in sentential subjects are more accessible than indirect
objects. This would conflict with the claim that sentential subjects,
like other islands, are relatively inaccessible points on the Extended
Accessibility Hierarchy.
    However, the pattern illustrated in (53)-(57) can be shown to be a
false counterexample to the unity of the Accessibility Hierarchy and the
Island Hierarchy. In fact, the ungrammaticality of (55b), (56aii), and
(56bii) is not due to the inaccessibility of indirect objects, but rather
to a language-specific constraint against preposition stranding in Modern

Hebrew. (This is argued for at length in Cole (to appear). We shall
restrict ourselves to a short summary here.) The effect of the deletion
of NPs other than subjects and direct objects is, in general, preposition
stranding. This is because, except for nominative and accusative relati-
vized NPs, the language usually provides no device which allows for the
nonappearance of a preposition as case marker.

Preposition stranding explains the ungrammaticality of (55b), (56aii),
and (56bii).[5] For at least some speakers, however, deletion of indirect
object and oblique case relativized NPs is possible. As G. Ben-Horin
(personal communication) and Givon (ms) have noted, for these speakers the
relativized NP may be deleted under identity with the preposition preceding
the head:

(58) a. Natati   sefer le oto yeled še Miriam natna ∅ sefer.
          (I) gave   book   dat same boy that Mary gave   book
          'I gave a book to the boy to whom Mary gave a book.'
      b. Natati   seter le oto yeled še Miriam natna lo   sefer.
          (I) gave   book dat same boy   that Mary gave dat him book

          'I gave a book to the boy to whom Mary gave a book.'
      c. *Raiti   et oto hayeled   še Miriam natna ∅ sefer.
          (I) saw acc same the boy   that Mary gave   book
      d. Raiti   et oto   hayeled še Miriam natna lo sefer.
          (I) saw acc same the boy that Mary gave dat him book
          'I saw the very boy to whom Mary gave the book.'
(59) a. Yašavta   al kise še Ben-Gurion yašav ∅.
          (You) sat upon chair that Ben-Gurion sat
          'You sat on a chair on which Ben-Gurion sat.'
      b. Yašavta   al kise še Ben-Gurion yašav alav.
          (You) sat upon chair that Ben-Gurion sat on it
          'You sat on a chair on which Ben-Gurion sat.'
      c. *Raita   kise še   Ben-Gurion yašav ∅.
          (You) saw   chair that Ben-Gurion sat
      d. Raita   kise še Ben-Gurion yašav alav.
          (You) saw chair that Ben-Gurion sat   on it
          'You saw a chair on which Ben-Gurion sat.'
(60) a. Histakalti   bamilon   še ata histakalta ∅.
          (I) looked   at (the) dictionary that you looked
          'I looked at the dictionary that you looked.'
      b. Histakalti   bamilon   še ata histakalta bo.
          (I) looked   at (the) dictionary that you looked   in it
          'I looked at the dictionary at which you looked.'
      c. *Raiti   et   bamilon   še ata histakalta ∅.
          (I) saw   acc the dictionary that you   looked
      d. Raiti   et   bamilon   še   ata histakalta bo.
          (I) saw   acc the dictionary that   you   looked   in it
          'I saw the dictionary which you looked at.'

Examples (58)-(60) show that the ill-formedness resulting from the
deletion of such relativized NPs as those of (55b), (56aii) and (56bii)
is not due to the inaccessibility of those NPs, but rather to language-
particular constraints on the output of the deletion. Thus, the ungram-
maticality of (55b), (56aii), and (56bii) in contrast with the grammati-
cality of (57), does not indicate that the Accessibility Hierarchy and the

Island Hierarchy are distinct entities.

Furthermore, the data just presented from Modern Hebrew suggest that apparent counter-examples to the claim that the Island Hierarchy is a sub-hierarchy of the Accessibility Hierarchy should be scrutinized carefully. Language-specific factors, as in Modern Hebrew, may lead to the appearance of incompatibility between the Island Hierarchy and the Accessibility Hierarchy when, no such incompatibility exists.

CONCLUSION.

We have shown that the Transformational Approach is seriously flawed and should, we think, be abandoned. We have examined some of the predictions of the Accessibility Approach and have found them to be almost entirely correct. Further research is called for to expand the data presented in (51) with information on other languages. We hope to be able to present the results of that research in the not-too-distant future.

ACKNOWLEDGEMENTS

FOOTNOTES

[1]The relativized noun phrase is fronted by an optional fronting rule from the preverbal position in S_2. The unfronted version is ambiguous between (14) and a grammatical sentence for which the gloss is "The news that the car which Gopal bought is beautiful is true." We have given the fronted version in order to eliminate the irrelevant, grammatical reading. For the conditions on fronting, see Kachru (to appear).

[2]Susumu Kuno (personal communication) has suggested that to in (41b) is a postposition, more or less equivalent to 'with', rather than a conjunction, equivalent to 'and'. If this is correct, the disparity between (41a) and (41b) is explained, and we can conclude that in Japanese, relativization out of coordinate NPs is blocked. We shall tentatively adopt Kuno's suggestion.

[3]Perlmutter (1972) claimed that island constraints do not apply in Japanese, and argued that for various reasons this fact favored the shadow pronoun hypothesis. We reject Perlmutter's factual claim on the basis of the data presented in the body of this paper. Thus, we shall not discuss the conclusions which he drew from the putative facts.

[4]It should be noted, however, that the hierarchy proposed by Neeld differs from that argued for in this paper. On the basis of data limited to English, Neeld contends that elements within coordinate VPs and Ss are more accessible to Relativization, etc., than are coordinate NPs. The data presented in the present study contradict Neeld's claims. While we shall not discuss the discrepancies between Neeld's results and our own at length, it is important to realize that the set of rules considered as possible candidates for island constraints differs in the two papers. Neeld defines the rules under consideration in terms of such formal operations as movement and deletion over a variable, while we consider rules having the effect of making an element prominent over a variable. The differences make the two studies less than fully comparable.

[5]That is, there are no derivations for these sentences. The normal application of the rules of the language would result in derived structures with stranded prepositions. This would violate an independently motivated constraint against preposition stranding. See Cole (to appear) for details.

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ON THE GRADATION OF GRAMMATICAL RELATIONS*

Gloria Sheintuch

A theory of Relational Grammar wherein grammatical relations
play a direct and central role was proposed by Johnson (1974),
and in unpublished work by Postal and Perlmutter. Relational
Grammar is superior in some ways to the "standard" structurally-oriented
Transformational Grammar in that it bypasses the need for the inherently
language particular structural configurations for all rules in which gram-
matical relations play a crucial role, and imposes structure on sentences
at a point in the derivation after all such rules have applied.

An adequate theory of Relational Grammar, that is to say one that is
properly constrained empirically, should exclude some possible analyses,
thereby providing some of the effects of a "discovery procedure" for dis-
tinguishing whether an NP is the subject, direct object, or indirect ob-
ject of a given sentence. A question relevant to the study of such em-
pirical constraints is whether the mentioned grammatical relations are
to be considered as absolute relations, or whether there is a fine sub-
classification of the known grammatical relations, possibly varying from
language to language, motivated by the diversity of the syntactic behav-
ior they trigger. Keenan, in a paper called "A Universal Definition
of Subject of" presented at the 1974 Winter Meeting of L.S.A.,enter-
tains the possibility of a sub-classification of this type in an attempt
to provide a universal characterization of the notion. Keenan advances
the hypothesis that the subjecthood of an NP results from a combination
of certain syntactic and semantic properties that characterize NP's which
are "pretheoretically felt to be subjects."

A relationally oriented study of some syntactic processes in Persian
reveals that the notion direct object is not an absolute unitary grammat-
ical relation, so that the relation must be further graded into three sub-
relations, depending on whether or not the direct object is specific, and
whether or not it is derived.[1] Table (1) below shows the sub-relations
of direct objects in Persian depending on the specificity and derivedness
parameters:

DIRECT OBJECT	[-derived]	[+derived]
[-specific]	Type I	unattested on the surface
[+specific]	Type II	Type III

Type I or the "strongest" direct object is basic (underlying) and
[-specific]. Type II which ranks next is basic, but [+specific]. Since
all superficial derived direct objects in Persian are restricted such
that they are [+specific] , the combination $\begin{bmatrix} +\text{derived} \\ -\text{specific} \end{bmatrix}$ direct objects
does not exist in the language, thus leaving only one more type--type III,
which includes the derived specific direct objects. Note that the term
[-specific] as it is used here includes all NP's that are not [+specific]
including generic NP's.

It is appropriate at this point to raise a basic question: Why is there a need to interpret the specificity variable as a function of the notion direct objecthood, thus subdividing the relation along this variable, and thereby implying that the notion direct object is not an absolute primitive? Why cannot one interpret the specificity parameter as an independent language-particular condition on certain rules involving the primitive notion direct object, and allow for a cross-cutting of independent variables? How does one distinguish whether two parameters are dependent or independent of each other? What kind of evidence is relevant to this issue? This is an important theoretical issue that deserves some consideration. The question is addressed in several points in this paper and an attempt is made to answer it.

Consider again Table (1). Assuming that derivedness and specificity are two independent cross-cutting parameters, one would expect a four-way typology, since each of the parameters is a binary variable. The fact that one of the types is not attested in the language would seem to be a totally accidental gap defying explanation. However, if the two parameters are related in some way, either directly, or perhaps, indirectly, each being related to a certain third variable, then the unattested type could be explained in terms of the relation between the two variables. Thus, assuming direct objecthood to be an inverse function of each of the variables of specificity and derivedness, the "strongest" direct object would necessarily have the properties $\begin{bmatrix} -\text{derived} \\ -\text{specific} \end{bmatrix}$, and the "weakest the properties $\begin{bmatrix} +\text{derived} \\ +\text{specific} \end{bmatrix}$. The derivedness variable seems to have precedence over the specificity variable in determining the "strength" of the direct object, in the sense that [+derived] direct objects may lack all of the semantic notions associated with the a priori "strong" underlying direct objects, whereas [+specific] direct objects lack only one of the properties associated with strong direct objects. It has been observed that [-specific] direct objects are more closely related to the verb than [+specific] ones, since the [-specific] direct object constitutes an integral part of the activity in the verb (as indicated by its amenability to verbal compounding); contrast 'eat an apple' with 'eat the apple'. Thus a [+derived] direct object, which lacks all the semantic properties associated with underlying direct objects, is "too weak" to possess the property [-specific] which is indicative of a strong relation with the verb. On the other hand, a [+specific] direct object which lacks only one of the properties associated with strong direct objects is not "weak enough" to be intolerant of the semantic properties associated with the a priori strong underlying direct objects. Such an analysis would correctly predict that the type $\begin{bmatrix} -\text{derived} \\ +\text{specific} \end{bmatrix}$ direct objects will be attested in the language, while the type $\begin{bmatrix} +\text{derived} \\ -\text{specific} \end{bmatrix}$ will not. Thus the gradation of the direct object provides an explanation for the unattestability of $\begin{bmatrix} +\text{derived} \\ -\text{specific} \end{bmatrix}$ direct objects in the language. One argument of this type, of course, does not settle which analysis is more warranted, but as the paper proceeds, more arguments will be presented that will render the latter position decisively more plausible.

For Persian, then, the Keenan and Comrie Accessibility Hierarchy will have to be altered to accomodate this finer subclassification of direct objects,

as in (2):

(2) subject /[-specific] direct object /[$\begin{smallmatrix}-\text{derived}\\+\text{specific}\end{smallmatrix}$]
    direct object /[+derived] direct object / indirect object

Note that [-specific] direct objects are redundantly [+specific], in-
dicating the dependence between the two variables.

Some comments about the Accessibility Hierarchy in (2) are in order at
this point, so as to clarify the implications, if any, the subclassification
of grammatical relations has for relation changing rules, in general. Strict
speaking, the subclassification within the direct object are not of the same
type as the distinctions between subjects, direct objects, and indirect ob-
jects. For example, a relation changing rule does not promote an NP from
one subclass to another within the same grammatical relation. (e.g. no rule
will change a [+specific] direct object to a [-specific] one.) Also, in a
rule such as Verb Raising, for example, a subject NP whose grammatical re-
lation to its original verb is destroyed cannot assume the relation of
direct object, the next position on the hierarchy, unless all subclasses of
that relation are empty--that is to say the resulting sentence cannot have
one[+specific] and one [-specific] direct object, for example.

If one examines the NP Accessibility Hierarchy cross-linguistically
for semantic or case markers one finds the following tendency: the relations
which are higher on the hierarchy generally do not carry case markings,
while those lower on the hierarchy do--that is to say for every language
there is a critical cut-off point, on the hierarchy, above which the gram-
matical relations do not carry semantic or case markers, and below which
the grammatical relations do carry them.[2] For Persian, such a point on
the Accessibility Hierarchy shown in (2) is between [-specific] and
[+specific] direct objects; subjects and[-specific] direct objects do not
carry case markers, while specific direct objects, both basic and derived,
and indirect objects do, (the [+specific] accusative case marker being
the suffix -rā and the dative marker being the prefix -be.)

With respect to Relative Clause Formation Stragies, the subclassifica-
tion of grammatical relations on the hierarchy in (2) is as follows:
subjects constitute one type; [-specific] direct objects constitute
another; [$\begin{smallmatrix}-\text{derived}\\+\text{specific}\end{smallmatrix}$] direct objects a third type; and[+derived] direct
objects together with indirect objects a fourth type. Thus, with sub-
jects, a pronoun copy of the NP relativized upon is not left behind in
the relative clause; with[-specific] direct objects a direct object
pronoun is optionally left behind; with basic[+specific] direct objects,
a pronoun copy and/or a clitic are optionally left behind; while with
derived direct objects and indirect objects a pronoun copy and/or clitic
pronoun are obligatorily left behind in the relative clause.[3] Look at
sentences (3) - (5) which exemplify the generalizations stated above:

(3) mard-i-ke raqsid. . .[4] (Relativization on subject)
    man - that danced . . .
    'The man that danced. . .'

(4) mard-i-ke ānhā didan-(eš) (Relativization on a
    man - that they saw-(him) [-specific] direct object)
    'A man whom they saw. . .'
where eš is an object clitic.

(5) mard-i-ke ānhā (u-rā)   didan-(eš)[5] (Relativization on
     man - that they (he-s.a.c.m.) saw-(him) $\begin{bmatrix} \text{-derived} \\ \text{+specific} \end{bmatrix}$ direct objects)
     'The man whom they saw. . . '

where "s.a.c.m." stands for "specific accusative case marker".
Relativization on derived direct objects requires that at least one of the
clitic or the pronoun copy appear in the relative clause. Therefore Rela-
tivization on a direct object derived via Dative Movement has three surface
variations, represented in (6a-c), while (6d) with no object clitic or pro-
noun copy in the relative clause, is ungrammatical:

(6) a- bače-i-ke ānhā u-rā sib dadan-eš...(Relativization on direct
     b- bače-i-ke ānhā u-rā sib dādand. .. object derived via
     c- bače-i-ke ānhā   sib dādan-eš.[6]. .Dative Movement)
        child-that they (him-s.a.c.m.) apple gave-(him)
        'The child whom they gave apples. . .'
     d-*bače-i-ke ānhā sib dādand
        child-that they apple gave
        ('The child whom they gave apples.')

     The same patterns of Relativization are observed for direct objects via
Subject Raising, as sentences of (7) indicate. Sentences (7a-c) are gram-
matical, while (7d) with no clitic or pronoun copy is not:

(7) a- bače-i-ke ānhā u-rā divāne hesāb mikonan-eš...   (Relativi-
     b- bače-i-ke ānhā u-rā divāne hesāb mikonand...   .zation on
     c- bače-i-ke ānhā   divāne   mikonan-eš...   direct objects
        child-that they (him-s.a.c.m.) crazy consider-(him) derived via
        'The child whom they consider to be crazy...'   Subject Raising)
     d-*bače-i-ke ānhā divāne hesāb mikonand
        child-that they crazy   consider
        ('The child whom they consider crazy...')

Indirect objects fall under the same subclass as derived direct objects in
so far as relative clause formation is concerned. A pronoun copy and/or a
clitic must appear in the relative clause as the sentences in (8) indicate:

(8) a- bače-i-ke ānhā be-u sib-rā dadan-eš...(Relativization on
     b- bače-i-ke anha be-u sib-rā dadand...indirect objects)
     c- bače-i-ke ānhā   sib-rā dādan-eš
        child-that they (to-him) apple-s.a.c.m. gave-(him)
        'The child whom they gave the apple to . . . '
     d-*bače-i-ke ānhā sib-rā dādand. . .
        child-that they apple-s.a.c.m. gave
        ('The child whom they gave the apples to. . .')

Since not only direct objects derived via Dative Movement behave like indirect
objects in so far as Relativization patterns are concerned, but also direct
objects derived via Subject Raising, one cannot claim that Relativization
has access to underlying grammatical relations such that direct objects
derived via Dative Movement, being indirect objects underlyingly, are treat-
ed like indirect objects. Such a claim implies that direct objects derived
via Subject Raising, being underlyingly subjects, behave like subjects with
respect to Relativization, but in fact these direct objects too behave like
indirect objects. Thus, it is solely the property [+derived] that char-
acterizes the subclass of direct objects that behave most closely like
indirect objects.

     Having established that specificity and derivedness interact with the
Keenan-Comrie hierarchy, once again one can ask whether the above parameters
constitute finer distinctions on the hierarchy or whether these parameters
constitute a set of conditions on NP's, independent of the Keenan-Comrie
hierarchy. Here, too, the argument for the former position outweighs the
one for the latter alternative. Had specificity and derivedness been

properties of NP's, independent of their specific position on
the Keenan-Comrie hierarchy, one would expect the property to
effect NP's in all positions on the hierarchy. The fact that
these parameters are significant in the hierarchy for only one particular
subpart of its range seems to indicate that they may not be independent
of it--but, on the contrary, closely related to the subrange for which
they play a significant role--namely direct objects.

The strongest or most highly accessible direct objects, as we have
seen have the properties [$\begin{smallmatrix}\text{-derived}\\\text{-specific}\end{smallmatrix}$], whereas the weakest direct objects
are [+derived]. Assuming [-specific] to be a property marking the "strength"
of a direct object, it follows that a [-specific] direct object cannot
become a derived one since derived direct objects lack all of the semantic
properties associated with the relation so that they are "very weak" direct
objects. Derived direct object NP's in Persian are indeed [+specific],
carrying the specific accusative case marker -rā, irrespective of their
underlying grammatical relation. The three possible sources of derived
direct objects in the language are Dative Movement, Subject Raising into
object position, and Verb Raising. A Dative Moved sentence like (9a) is
grammatical, whereas one like (9b) where the derived direct object is
[-specific] is not:

(9) a- man ān-bače-rā   sib-i dādam (Dative Moved)
       I   that-child-s.a.c.m apple-a gave
       'I gave that child an apple.'
     b-*man bače-i sib-i dādam (Dative Moved)
        I   child-a apple-a gave
        ('I gave child an apple.')

Likewise a Subject Raised sentence like (10a) is grammatical, while
one like (10b) is not, the derived direct object sā?at being [-specific]:

(10) a- man in-sā?at-rā   piškeš-e xub-i hesāb mikonam (Subject-
         I this-watch-s.a.c.m. gift-a.l. good-a   consider   Raised)
         'I consider this watch to be a good gift.'
where "a.l." stands for "adjectival liason"
      b-*man sā?at piškeš-e xub-i hesāb mikonam (Subject-Raised)
         I watch gift-a.l. good-a consider
         ('I consider a watch to be a good gift.')

A third source of derived direct objects in Persian is Verb Raising.
One type of causative constructions in Persian is derived from a bisentential
underlying structure by a process which lifts the embedded verb into the
matrix sentence to form a verbal unit with the matrix verb, thereby re-
ducing the bisentential construction to a simple clause. Verb Raising
applies to underlying structures such as (11a) to yield causative structure
such as (11b):

(11) a- man CAUSED [bače raqsid]
         I   CAUSED [child danced]
where CAUSED is an abstract semantic element of causation.
      b- man bače-rā raqsāndam   (Verb Raised)
         I child-s.a.c.m. made dance
         'I made the child dance.'

Notice that bace, the embedded subject of the underlying structure,
becomes the direct object in the derived structure. (The subject position
being occupied by the NP man, the next available position on the Keenan and
Comrie Hierarchy is that of a direct object.) While no restrictions on
specificity are imposed on an underlying embedded subject, a causative
sentence like (12) is ungrammatical, since bače, the derived direct object,
is [-specific]:

(12) -*man bače-i__raqsāndam (Verb Raised)
         I   child-a   made dance
       ('I made a child dance.)

   Instead of viewing specificity as a parameter along which direct
objects are subdivided such that one type is the [+derived +specific] direct
objects, attested invariably in the output of Dative Movement, Subject
Raising, and Verb Raising, one may want to claim that specificity is inde-
pendent of the grammatical relation direct object, and that the specificity
restriction can be interpreted as a language-particular condition on certain
rules involving the primitive notion direct object. The latter analysis
though possible, is not highly motivated, considering the fact that the con-
ditions on the above rules turn out to be identical--namely that the direct
object be [+specific]. To have three identical conditions on three different
rules which have in common a direct object in the output would be to lose a
generalization,-- namely that derived direct objecthood and specificity
are related in some regular way. This generalization would be properly
captured by a general filter on surface sentences that marks them as ungram-
matical if they contain direct objects that are[+derived] and[-specific],
since these properties are contradictory with respect to the strength of
the direct object. Such a filter would directly follow from and be moti-
vated by the proposed gradation of direct objects wherein the two prop-
erties have opposite effects with respect to strength, with
[+derived] having precedence over[-specific].

   The rule of Dative Movement also distinguishes between the proposed
subrelations of direct objects. Dative Movement promotes an indirect
object to direct object position, demoting the ex-direct object to chômeur
status, so that it bears no relation to the verb. In Persian only sentences
with[-specific] direct objects may undergo Dative Movement. (13a) undergoes
Dative Movement to produce (13b):

(13) a- ǰān sib-i   be-bače   dād
          John apple-a to-child gave
         'John gave an apple to the child.'
      b- ǰān bače-rā   sib-i   dād (Dative Moved)
          John child-s.a.c.m. apple-an gave
         'John gave the child an apple.'

However the Dative Moved version of (14a) with a[+specific] direct object
results in the ungrammatical (14b):

(14) a- ǰān sib-e-man-rā be-bače dād
          John apple my-s.a.c.m. to-child gave
         'John gave my apple to the child.'
      b-*ǰān bače-rā   sib-e-man dād (Dative Moved)
          John child-s.a.c.m. apple-my gave
         ('John gave the child my apple.')

Thus one can conclude that since the rule of Dative Movement applies only
to sentences with[-specific] direct objects, the subrelation [-specific]
direct object is motivated. Of course, it is also possible to interpret
the [-specific] requirement on the direct object in the input of Dative-
Movement as a condition on the rule. However since the specificity dis-
tinctions have been independently established for direct objects, then to
posit a separate condition on the rule of Dative-Movement would miss the
generalization that the specificity distinction is relevant to much of the
syntactic behavior of direct objects in Persian.

   The fact that the specificity parameters plays a role in the direct

object relation both on the Keenan-Comrie hierarchy and in relation changing
rules renders suspicious any analysis that interprets the specificity factor
as a property independent of the direct object, but cross-cutting with it.
It would seem completely ad hoc in such an analysis that the specificity
factor cross-cuts with the Keenan-Comrie hierarchy and with the relation-
changing rules in exactly the same way, effecting direct objects only. An
analysis, however, that allows for some dependency between the notions direct
objecthood and specificity predicts that the cross-cutting of the specificity
variable with any type of linguistic device sensitive to grammatical relations
(i.e. constraints in terms of hierarchies, transformations, etc.) will follow
a certain pattern, namely that it will generally effect the direct object
only.

The classifications of the relation direct object proposed in this paper
have been shown to be motivated by the syntactic behavior of direct objects
in Persian. It is interesting to note that Verb-Raising, being a productive
process in the language, results in a direct object that behaves ambivalent-
ly, sharing with derived direct objects the restriction that it be [+specific]
as sentences (11b) and (12) show, yet mimicing the behavior of underlying
direct objects in so far as relative clause formation strategies are con-
cerned. As with underlying direct objects, both the pronoun copy and the ob-
ject clitic are optional in a relative clause formed on the derived direct
object of a causative sentence, as (15) shows:
(15) bače-i-ke ānhā   (u-rā)   raqsāndan-(eš)...(Relativization on
     child-that they (him-s.a.c.m.) made dance-(him) direct object
     'The child whom they made dance. . .'   derived as a result
                                                      of Verb Raising)
The commonly observed phenomenon that Verb Raised sentences are often analyzed
to be basic ones by many speakers can be attributed to the ambivalent char-
acteristics of the direct objects of such sentences with respect to the sub-
class they belong to.

The features that unite every direct object under a single common gram-
matical relation distinct from subjects and indirect objects are their unitary
subjection to Passivization. Passivization in Persian applies to all and
only direct objects. Thus Passivization applies to [-specific] underlying
direct objects as in (16a) to produce (16b) and to [+specific] underlying
direct objects as in (17a) to produce (17b):
(16) a- bače   sib-i   xord
         child apple-a ate
         The child ate an apple.'
      b- sib-i   xorde-e šod   (Passive)
         apple-an eaten   became
         'An apple was eaten.'
(17) a- bače sib-rā   xord
         child apple-the ate
         'The child ate the apple.'
      b- sib xord-e šod   (Passive)
         apple eaten became
         'The apple was eaten.'
A derived direct object in-sa?at 'this watch' in (10a) undergoes
Passivization to produce (18):
(18) in sā?at piškeš-e xub-i hesāb mišavad (Passive of (10a))
     this watch gift-a.l. good-a is considered
     'This watch is considered to be a good gift.'
Also, surprisingly, the Passive version of the ungrammatical (10b)
with a [+derived/-specific] direct object, turns out to be the grammatical

(19):
(19)   sā?at   piškeš-e   ʀub-i   hesāb mišavad   (Passive of 10b)
       watch   gift-a.l.   good-a   is considered
       'A watch is considered to be a good gift.'

This strengthens the claim that the restriction that all derived direct objects be [+specific] is a surface constraint with global access to underlying grammatical relations that filters out as ungrammatical all surface sentences containing [+derived / -specific] direct objects. Such direct objects, though a theoretically possible subclass, cannot be practically realized, since the two properties [+derived] and [-specific] (of the direct object) are contradictory with respect to the strength of the direct object. The [+derived] direct objects, are very weak in that they do not possess any of the semantic properties of the underlying direct object, and cannot tolerate the property [-specific] which marks strength in a direct object.

Though the proposed subclassification of direct objects may turn out to be idiosyncratic to Persian, it should be clear that grammatical relations do not seem to be absolute clear-cut relations, making imperative further research of a cross-linguistic nature on this issue.[8]

Footnotes

[*]I would like to thank Jerry Morgan, Georgia Green, and Peter Cole for insightful comments and discussions. This paper was presented at the 1975 annual meeting of L.S.A.

[1]It should be obvious that the discussion is only about NP's and not sentential object complements. The behavior of such object complements has not yet been investigated by the author.

[2]The higher the grammatical relation is on the hierarchy, the more essential it is to the verb, so that while all verbs must have subjects, not all verbs have direct objects, and even less so indirect objects and prepositional phrases. Thus it is quite likely for a "hearer" to be able to perceive the subject of a verb, (which is higher on the hierarchy) without any perceptual clues in the form of markers. This is generally not as true with respect to relations that are lower on the hierarchy. Also note that there are languages in which all relations are marked, or all relations are unmarked, so that the critical cut-off point would be either at the top or at the bottom of the hierarchy respectively.

[3]It has been generally observed in many languages that a pronoun copy becomes obligatory in the relative clause as the position of the NP relativized upon is lower on the hierarchy.

[4]Definiteness is not represented morphologically in Persian.

[5]Note that Persian is a SOV language.

[6]bače-i-ke in (6c) could also be interpreted as a [-specific] derived direct object. This ambiguity indicates that the subclass [+derived / -specific] direct objects may appear in intermediate derivations, and that they are filtered out by a surface constraint with global access to underlying grammatical relations that marks them as ungrammatical on surface structure. Thus in (6c) where the direct object does not appear overtly in the relative clause, the [-specific] interpretation is possible, since the surface constraint is not violated. Note that these "intermediate" direct objects behave no differently from other derived direct objects that are attested on

the surface, with respect to their accessibility to Relativization, and
are included with [+derived] direct objects in the hierarchy outlined in (2).
⁷See also evidence for this surface filter in footnote 6.
⁸There is evidence from other languages such as Arabic, Hebrew
and Albanian, that specificity plays an important role in the grammatical
relation direct object; in such languages the specific direct objects are
overtly marked for case, for example.

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ON THE DIACHRONIC RELEVANCE OF THE PROMOTION
TO SUBJECT HIERARCHY*

Yael Ziv

I. On Subject Properties and the Promotion to Subject Hierarchy

In a paper entitled "Towards a Universal definition of 'subject'"
(1976) Keenan claimed that the notion 'subject of' is not a single unified
concept, but rather the subjecthood of an NP results from a combina-
tion of factors. The subject properties list provided in this context
includes properties relevant to the surface coding of the subject (e.g.
case marking, position relative to the verb), properties involving the
exact transformational behavior of the subject and properties which have to
do with the semantic and/or pragmatic content of subjecthood (e.g.
Agency, Independent existence). A noun phrase is, accordingly, judged
to be the subject of a given sentence, if it possesses " a clear pre-
ponderance of the subject properties" relative to the other NP's in the
sentence. This "multifactor" concept of subject, can be utilized to cap-
ture generalizations about varying degrees of subjecthood.

Keenan used this notion of 'subject of' to advance the following
generalization: "Non basic subjects [subjects derived by some transfor-
mational process]. . . frequently do not have quite as full a complement
of the subject properties as do [basic] subjects" (1976:323). This genera-
lization is expressed in the following Promotion to Subject Hierarchy,
which attempts to represent the relative difficulty with which the various
subject properties can be passed on to derived subjects.

1. The Promotion to Subject Hierarchy.

Coding Properties	Behavior Prop.	Semantic/Pragmatic Prop.
position > case marking > verb agreement	deletion, movement > case changing prop. control of cross reference prop.	> agency, independent existence, selectional restrictions

This promotional hierarchy (PH) claims that it is easier for derived subjects
to take on the coding properties of subjects of basic sentences than to
assume the behavioral or semantic properties of subjects of basic sentences.
Furthermore, within the coding properties, subject position is the easiest
to assume, with case marking and verb agreement being more difficult pro-
perties to take on.

The PH is intended as a characterization of a synchronic process.
However, in this paper I offer a diachronic analysis of certain posses-
sive constructions in Colloquial Israeli Hebrew, which suggests that the
PH is not only synchronically relevant, but is also reflected in a
diachronic process in colloquial Israeli Hebrew. I will examine here
certain possessive constructions in Modern Hebrew and show that there
are differences between the normative literary style and the colloquial
Israeli style of Hebrew with respect to the structure and analysis of
these possessive constructions. I will claim that the possessive construc-
tions are currently undergoing grammatical reanalysis such that, at the least,

the term that functions as subject in the normative literary style $\emptyset$ nothing
is losing some of its subject properties in the colloquial dialect.   It
will be shown that the PH enables the presentation of the diachronic process
of loss of subject properties within a sensible framework of gradation of
subject properties, and the various stages of the diachronic process,
especially the manner in which the subject coding properties are lost,
will provide confirmation for the gradation of subject coding properties
in the manner displayed in the PH.

II.   Normative Literary Hebrew, Colloquial Israeli Hebrew and the
      Structure of Possessive Constructions--Background.
      A brief comment on the two dialects of Modern Hebrew which are rele-
vant for the present investigation seems appropriate at this point. By
'Colloquial Israeli Hebrew" (CIH) I will refer to the dialect of Hebrew
used in casual conversations in non-formal situations, where the social
or educational status of the participants is irrelevant.   'Normative
Literary Hebrew' (NLH), on the other hand, will stand for the style
or styles used in literary pieces and throughout the media.   This dialect,
which is regarded as the norm, is taught in the school system and is
called for in formal situations.   The differences between the colloquial
style and the normative literary style can be regarded not merely as
dialect variations, but also due to the nature of these two styles,
as an instance of a diachronic change in progress.   As Sapir (1921:156)
put it: "It is of course the uncontrolled speech of the folk to which we
must look for advance information as to the general linguistic movement."
      Let us now consider the structure of the possessive constructions.
In NLH possessive constructions are expressed in the following sche-
matic manner:

2. be   to someone   something
          dative   nominative

The noun phrase that denotes the possessed object occurs in the nominative
case,[1] the verb to be agrees with the possessed nominal in gender, number
and person, and the noun phrase that designates the possessor occurs
in the dative case.   Consider the example sentences in 3.

3a.   haya   ledan meil   or   miyisrael.
      was 3m.sg to Dan coat(m) leather   from Israel
      'Dan had a leather coat from Israel:

 b.   hayta   ledan   mexonit   xadaša.
      was 3f.sg   to Dan   car (f.)   new(f.)
      'Dan had a new car.

 c.   hayu ledan   arbaa   kartisim   lehacagat   xacot.
      were to Dan   four(m) tickets(m)   to (a) show midnight
      'Dan had four tickets to a midnight show.'   2

 d.   hayu ledan   štey   dirot   betelaviv.
      were to Dan   two(f)   apartments(f) in Tel-Aviv

In Hebrew only subjects control verb agreement and, therefore, the fact that
the verb in sentences 3a-d agrees with the possessed nominal indicates that

the latter functions as the subject in these possessive constructions.[3]
In what follows, I will show that the possessed nominal is losing some
of its subject properties in CIH. I will open with an examination of the
coding properties.

III. Loss of Subject Coding Properties.
    3.1 Subject position
    There are various possible word orders in Modern Hebrew; most if not
all of these word order combinations seem to be conditioned by pragmatic
factors.[4] However, the most unmarked word order in both CIH and NLH is
SVO. With respect to the possessive construction under investigation,
the possessed nominal (the subject in NLH) does not normally occur in sentence
initial position in either NLH or in CIH. Thus, sentences like those in 4,
where the possessed nominal occurs sentence initially

    4a. meil   or miyirael   haya   ledan.
         coat(m) leather from Israel   was(3m.sg)   to Dan
         'Dan had a leather coat from Israel.'
     b. mexonit   xadaša hayta   ledan.
         car(f)   new(f) was(3f.sg)   to Dan
         'Dan had a new car.'

would be highly marked both in NLH and in CIH: they would be practic-
ally impossible, unless the possessed nominal were either intended as
focus, or conditioned by the context (linguistic or situational) to serve as
topic. [See Ben-Horin (1976) for an extensive discussion of 'topic' and
'focus' in Modern Hebrew.] It will be suggested here that the lack of typical
subject position for the possessed nominal in the unmarked case functions
significantly in the reanalysis of the possessive constructions in CIH.
Next I will consider case marking.
    3.2 Case Marking
    In NLH the possessed nominal occurs in the characteristic subject case--
the nominative, whereas in CIH the possessed nominal occurs in the accusa-
tive case.
    The accusative marker et occurs only with definite NP's. This is
manifested in the sentences of 5 and 6:

    5a. natati   et   hasefer   le yonatan.
         (I) gave acc. marker   the book   to Jonatan
     b* natati   et sefer   le yonatan.
         (I) gave   acc. marker a book   to Jonatan
    6a. raiti   et   Mose   haboker.
         (I) saw acc. marker Moshe   the morning (=this morning)
     b* raiti   Mose   haboker.

    5b. is ill formed because et precedes an indefinite NP, whereas 6b
is ill-formed due to the absence of et preceding the definite NP Mose.[5]
    The lack of morphological distinction between the nominative and the
accusative case on indefinite NP's makes it impossible to point to any change
of case marking from nominative in NLH to accusative in CIH in instances
where the possessed nominal is an indefinite NP. I will, therefore, deal
here with definite NP's only. Compare the NLH sentences in 7 with the CIH

sentences in 8. In 8, but not in 7, the possessed nominal is preceded
by the accusative marker et. Consider:

    7a. haya   ledan hameil   miyisrael od   baxoref
        was(3m.sg)to Dan the coat from Israel still in the winter
        šeavar.(that passed).
        'Dan had the coat from Israel already last winter.'
    b. hayta   lahem   hamexonit   hazot   od beyisrael.
        was(3f.sg) to them the car(f.) the this still in Israel.
        'They had this car back in Israel.'
    c. hayu le rut hasmalot   haele   kvar   bakayic.
        were to Ruth the dresses the these already in the summer
        'Ruth had these dresses already in the summer.'
    d. hayu   ledan   hakartisim   haele   kvar   lifney   yomayim.
        were to Dan   the tickets the these already before two days
        'Dan had these tickets already two days ago.'

and

    8a. haya   ledan   <u>et</u> hameil   miyisrael od baxoref   šavar.
        was(3m.sg) to Dan acc. the coat from Israel still in the winter
                  marker
        šeavar.
        that passed.
        'Dan had the coat from Israel already last winter.'
    b. haya   leruti   rak <u>et</u> hamilon   hamekucar
        was(3m.sg) to Ruthie   only acc. the dictionary the abridged
        kšehi   lamda   anglit.
        when she studied English
        'Ruthie had only the abridged dictionary when she studied
        English.'
    c. haya   li   <u>et</u> hakartis   lahacaga   hazot
        was(3m.sg) to me acc. the ticket to the show the this
        kvar   lifney   yomayim.[6]
        already before two days.
        'I had the ticket to this show already two days ago.'

(The observant reader might have noticed that the example sentences in 8 in-
clude only possessed nominals which are singular masculine; this is
the case because, as will become evident shortly, the sentences where
the possessed nominal is other than singular masculine exemplify more
overt changes in the subjecthood of the possessed nominal.)
    The behavior of the possessed nominal with respect to pronominalization
and relativzation will serve as additional evidence that the possessed
nominal functions as accusative NP in CIH. Consider pronominalization first.
The sentences in 9 (following) indicate that the possessed nominal can
be referred to only by the accusative pronoun. (Hence the well formedness
of 9(a) as a continuation of 9). The reference to the possessed nominal
by the nominative pronoun, as in 9(b), results in ill-formedness. Consider:

    9.   hu natan li et   hamafteax   ladira   šelo.
        he gave to me acc. the key(m) to the apartment his
        'He gave me the key to his apartment.'

```
a.  haya  li  oto  kimat  xodeš.
    was to me him almost a month
    (3sg.m)  (acc.)
    'I had it for almost a month.'₇
b*  hu   haya  li  kimat  xodoeš.⁷
    he  was to me  almost a month
    (nom.)
```

Similar facts obtain in relativization with pronoun retention. The
sentences in 10 indicate that the relativized possessed nominal can be
referred to in the relative clause only by the accusative pronoun

```
                      ⎧ še    haya  li  oto  ⎫
                      ⎪ that  was  to me him ⎪
10a.  ze hasefer      ⎨ (še)oto  haya  li   ⎬  kšehitxalti lilmod.
      this the book   ⎩ (that)him was to me ⎭  when(I) began to study
  b*  ze hasefer     šehu      haya  li kšehitxalti lilmod.⁸
      this the book that he (nom.)
```

Thus, we can conclude that in CIH the possessed nominal is no longer
associated with the nominative, subject, case marker with which it was
associated in NLH, rather, it has acquired the accusative case marker.
I will now show that the possessed nominal is currently in the process
of losing its third subject coding property--control over verb agree-
ment.

3.3 Verb Agreement

When the possessed nominal is a definite NP its loss of control
over verb agreement is in a more advanced stage than is the loss of control
over verb agreement in the case where the possessed nominal is an indefinite
NP. I will, therefore, start here with possessive constructions where the
possessed nominal is a definite NP. Consider the NLH possessive constructions
in 7 once again. In such sentences we find that the possessed nominal controls
verb agreement. In CIH, however, where the definite possessed nominal
occurs with an overt accusative marker, it tends to lose control of verb
agreement. Consider the CIH sentences in 11-14.

```
11a.? hayta    lahem   et    ·· ·· hamexonit  hazot
      was(3f.sg) to them acc. mark the car(f) the this(f)
      od    beyisrael.
      still in Israel
      'They had this car back in Israel.'
  b.  haya      lahem     et      hamexonit    hazot
      was(3m.sg) to them  acc. mark the car(f)  the ehis(f)
      od beyisrael.
12a.? hayta     ledani   et   haktovet    šela
      was(3f.sg) to Dani acc.mark. the address(f) hers
      kšepagašti oto.
      when (I)met him
      'Dan had her address when I met him.'
  b.  haya     ledani   et   ·· haktovet   šela.....
      was(3m.sg) to Dani acc.mark. the address(f) hers
```

13a.? hayu   leruti   et hakartisim   haele
      were(pl) to Ruthie acc. mark. the tickets(m.pl) the these
      kvar   lifney   yomayim.
      already before two days
      'Ruth had these tickets already two days ago.'
   b. haya   leruti   et   hakartisim   haele . . .
      was(3m.sg) to Ruthie acc. mark. the tickets(m.pl.) the these
14a.? hayu leruti   et   hasmalot   haele
      were to Ruthie acc.mark   the dresses(f.pl.)   these
      kvar   bakayic.
      already in the summer
      'Ruth had these dresses already in the Summer.'
   b. haya   leruti   et   hasmalot   haele. . .
      was(3m.sg) to Ruthie   acc. mark   the dresses(f.pl.) these

Sentences like 11a.-14a., where the verb agrees with the accusative
definite possessed nominal, were judged by most speakers whom I have
consulted as somewhat lower in acceptability than the corresponding
b sentences were the verb occurs in the third person singular masculine
irrespective of the gender and number of the possessed nominal.[9]
Other speakers accepted both versions as equally well-formed and only
a few preferred the sentences in a, where the verb agrees with the
possessed nominal. I take these variations in speakers' judgements to
be indicative of the fact that the loss of control over verb agreement
by the possessed nominal is in progress now. The two facets of the
grammatical process--pre and post loss of control over verb agreement--
apparently co-occur in the colloquial style, giving rise to such varia-
tions among speakers as I have just mentioned.

    Concerning indefinite possessed nominals, when confronted with
sentences such as 15 and 16

    15a. hayta   li mexonit kazot.
         was(f.s) to me a car (f) such

         'I had such a car.'
      b.? haya   li   mexonit   kazot.
         was(3m.s) to me   a car (f) such
      c. haya   li   et   hamexonit   hazot.
         was(3m.sg) to me acc. mark. the car(f)   the this(f)
         kšelamadeti   bauniversita
         when(I) studied   in the university
         'I had this car when I studied in the university.'
    16a. hayu   la   tamid hamon   beayot.
         were(pl)   to her   always a lot of   problems(f.)
         'She always had a lot of problems.'
      b.? haya   la   tamid hamon   beayot.
         was(3m.sg) to her always a lot of   problems (f)
      c. haya   la et   habeayot   haele   od
         was(3m.sg) to her acc. mark. the problems the these still
         beyisrael.
         in Israel
         'She had these problems back in Israel.'

most speakers whom I have consulted considered the b version, where
the verb does not agree with the possessed nominal as sub-standard,
when compared to both the a version, where the verb agrees with the
possessed nominal, and the c version, where there is no verb agree-
ment, but where the possessed nominal is definite. Some speakers
claimed that all three sentences were equally well-formed. No one,
however, preferred the b version over any of the other two.

These judgements reveal that loss of control over verb agreement
by the indefinite possessed nominal is in a less advanced stage than
is loss of control over verb agreement by the definite possessed nominal.
This suggests that in instances where there are overt clues that the possessed
nominal lacks the characteristic subject case marking (the nominative)
the next stage in the loss of subject coding properties, namely, loss
of control over verb agreement, follows more readily than in cases
where there are no overt clues as to the case marking of the NP in question.[10]

3.4   The Coding Properties and the Promotional Hierarchy--
        Some Conclusions

What I have shown so far suggests that the diachronic process
involved in the transition from the normative structure to the collo-
quial structure may constitute a mirror image of the synchronic process
described by the PH. While the PH claims that when a term gains
subject properties it assumes subject position with greater ease than it
can assume case marking and control over verb agreement, the diachronic
process at hand suggests that when a term loses subject properties
it gives up subject position with greater ease than it can relinquish
its case marking or its control over verb agreement.

The various stages of the diachronic process seem to occur in
the order described above. Due to the basically conservative nature
of normative dialects, the fact that lack of subject position is at-
tested in the normative as well as in the colloquial style suggests that
this is the earliest stage of the diachronic process. [11]

Concerning the other two subject coding properties, if loss of con-
trol over verb agreement were to occur prior to any change of case
marking, then (a) sentences like those in 17, where case marking on the
possessed nominal has not changed, but where the verb no longer agrees
with the possessed nominal, could have been well-formed at least for
some speakers;

17a. *haya   li   hamexomit hazot   kvar   lifney   šana.
     was(m) to me the car(f) the this(f) already before   a year
     'I had this car already a year ago.'
  b. *haya lerut   hasmalot   haele   od   beyisrael
     was(m) to Ruth the dresses(f) the these   still in Israel
     'Ruth had these dresses back in Israel.'

however, I have found no such speakers, and (b) we would probably find
more variance in speakers' judgements about change of case than about
verb agreement. However, we have seen that exactly the opposite situation
obtains.

Unless loss of control over verb agreement and change of case
marking happened simultaneously across the board (a contention which

cannot be supported by the facts--loss of control over verb agreement has not yet applied across the board whereas change of case marking has) the only plausible direction of the change could have been case change before loss of: control over verb agreement.

I will now turn to a discussion of the status of the possessed nominal with respect to subject behavior properties.

IV. Subject Behavior Properties.

The transformational operations which may bear on the issue at hand are subject raising and equi NP deletion. [12,13]

Let us examine subject raising to subject position. [14]

4.1 Subject Raising to Subject Position

Subject raising to subject position can bear on the question of the subjecthood of the possessed nominal, because the victim of this transformation is the subject. When the possessed nominal is indefinite it can undergo subject raising to subject position, thereby exemplifying subject behavior properties. Consider:

18a. iyu   lo   revaxim gdolim rak   baona
     will be (3pl) to him profits large   only in the season
     habaa.
     the next
     'He will have large profits only in the next season.'
  b. revaxim gdolim   ⎛ yatxilu   ⎞ liyot   lo   ⎛ rak ⎞
                      ⎜ will begin ⎟ to be to him ⎜ only ⎜
                      ⎜ yamšixu   ⎜   ⎜ gam ⎜
                      ⎝ will continue⎠   ⎝ also ⎠
     baona   habaa.
     in the season the next
     'He will   ⎛ start having   ⎞   large profits   only ⎛
                ⎝ continue to have⎠   also ⎠
     in the next season.'
19a. iyu   la carot   lo regilot   im hi   titgareš.
     will be to troubles not usual   if she will get divorced
     (3pl.) her
     'She will have unusual troubles, if she gets a divorce.'
  b. carot   lo regilot   ⎛ yatxilu   ⎞ liyot la im . . .
     troubles not usual   ⎜ will begin ⎟ to be to her if
                           ⎜ alulot   ⎜
                           ⎜ are liable ⎜
                           ⎜ omdot   ⎜
                           ⎝ are about   ⎠

When the possessed nominal is definite, however, as in the sentences of 20 and 21 the application of subject raising appears to result in sentences of at least questionable acceptability in CIH. Consider:

20a. iye   lo   et   harevaxim   haele   gam
     will be (3sg.) to him acc.mark the profits the these also
     baona   habaa.
     in the season   the next
     'He will have these profits next season too.'

```
    b.? harevaxim        haele    ( yatxilu         \ liyot  lo ; rak )
        the profits   the these   \ will begin .   ( to be  to ; only /
                                   ᒑ yamšixu          \        him, gam
                                   ( will continue  )          \ also ᐟ
        baona            habaa.
        in the season the next
 21a.? hacarot          haele     / yatxilu )     liyot la im hi   titgareš.
        the troubles these        \ alulot (     to be to her if . . .
                                   '.omdot ..ᐟ
    b.??hacarot         haxi    noraot  ,yatxilu )    liyot   lexa im
        the troubles the most  awful    `alulot :    to be to you if
        lo taazov       ota.15
        not (you) will leave her
```

As expected, both definite and indefinite possessed nominals appear
to be "raisable" by Subject raising in NLH, consider:

```
    22a. eynayim yafot          atidot        lihyot lebat              axi.
         eyes     beautiful   are likely   to be     to the daughter my brother
         'My brother's daughter is likely to have nice eyes.'
      b. haeynayim      hayafot     baolam atidot     lihyot  lebiti.
         the eyes   the beautiful in the  are about to be to my daughter
                                        world
         'The nicest eyes in the world will (probably) belong to
         my daughter.'
and
    23.  hahizdamnuyot   halalu atidot       lihyot    la    gam
         the chances     these  are likely to be   to her  also in
         bašana    haba'a.
         the year the next
         'These chances are likely to be hers next year too.'
         (=She will probably have these chances next year too.)
```

The difference between the definite and indefinite possessed
nominals seems peculiar at first glance. There is no such distinction
in the application of subject raising elsewhere. This suggests what
I have already mentioned above, namely, that the extent to which definite
possessed nominals are subject -like differs from the extent to which
their indefinite counterparts are. The definite possessed nominals
appear to be less subject-like than the indefinite possessed nominals.
Recall, in this context, the facts about verb agreement. We have seen
that when the possessed nominal is definite its loss of control over verb
agreement is more widespread and in a more advanced stage than in the
instances where the possessed nominal is indefinite.[16,17]

Let us now consider the behavior of the possessed nominal with
respect to the rule of Equi NP deletion.

4.2 Equi NP Deletion·

Since the victim of this transformational operation must be a
subject, equi NP deletion provides a test for subjecthood. As can be
seen from the example sentences in 24 neither definite nor indefinite
possessed nominals can be the victims of equi NP deletion in CIH.

24a. *xaverim tovim af pa'am lo rocim liyot li.
    friends good (even once not) want to be to me
                      never
    'Good friends never want to be mine.'
  b. *haxaverim haele hexlitu lo liyot li.
    the friends the these decided not to be to me
    'These friends decided not to be mine.'

Hence, with respect to equi NP deletion the possessed nominal
does not function as subject. The impossibility of the possessed
nominal to undergo equi NP deletion could be indicative of the loss of
its relevant subject properties in CIH. If this were the case, we would
expect the equivalent sentences in NLH to indicate that the possessed
nominal can undergo equi NP deletion. It turns out, however, that the
possessed nominal cannot be the victim of equi NP deletion even in NLH
possessive constructions and hence the ill-formedness of the sentences in
25:

    25a. *yedidim tovim hištadlu lihyot li miyom bo'i leyisrael
        friends good tried to be to me from day my coming to Israel
and   'Good friends tried to be mine, since the day I came to Israel.'
    b. *hayedidim halalu hištadlu . . . .
      the friends the these

It, therefore, seems that the impossibility of the possessed nominal
to undergo equi NP deletion in CIH is not due to its loss of any subject
property, but rather, it is due to its lack of the property that is rele-
vant for the application of equi, in the first place. The possessed nominal,
in other words, seems never to have had the properties that are neces-
sary in order to function as the victim of equi, and thus it could not
have lost them.

If this is indeed the case then the inapplicability of equi NP
deletion to the possessed nominal does not bear on the question of the
subjecthood of the possessed nominal. [18]

    4.3 Subject Behavior Properties and the Promotional Hierarchy--
        A Brief Summary

We have seen that the possessed nominal in CIH has lost at least
one of its subject behavior properties: when it is definite, it
yields questionable sentences with respect to subject raising to subject
position. The difference between the "raisability" of the possessed
nominal when it is indefinite and its questionable raisability when it
is definite suggests that the process by which the possessed nominal is
losing its subject behavior properties is in accordance with the process
by which it loses its subject coding properties.

If we go back to the PH, we will find that the only claims that
it makes with respect to behavior properties of subjects are that
a) the behavior properties are harder to assume than the coding pro-
perties and b) the behavior properties are easier to assume than the
semantic/pragmatic properties of subjects. There is no established order
within the behavior properties such that property X would be easier to
assume than property Y. With respect to the grammatical reanalysis of
the posessed nominal as I have discussed it so far, there seems to be
no clear evidence that might bear on the relative order between loss of

subject coding properties and loss of subject behavior properties.[19] With
respect to the semantic/pragmatic properties of subjecthood in the pos-
sessive constructions, I have not been able to come up with any evidence
that a change involving these properties has taken place in the tran-
sition from NLH to CIH. It should be mentioned, however, that these
properties are the least well-understood and, hence, they are the most
difficult properties to examine. This difficulty in examining the semantic/
pragmatic properties of subjecthood is particularly true of possessive
constructions, due to the absence of an overall characterization of the
relation of 'possession'.

At this point it seems appropriate to discuss a possible reason
for the reanalysis that we have observed in the possessive constructions
and to point out potential future developments in this reanalysis.

V. On the Reanalysis

    5.1 A Potential Reason

    One suggestion which might provide an explanation for the reanalysis
in the possessive constructions has to do with the influence on the
syntax of CIH of certain European languages where such possessive con-
structions have the possessor as subject and the possessed as direct
object. Consider the examples in 26:

26.   I have a book   (English)
       ya mam kšəwškẽw   (Polish)
       iš habe ayn bux   (German)
       ix hob ə bix   (Yiddish)

Such an influence is not at all surprising in light of the fact
that Israel is an immigration country and European languages such as
Yiddish, German, Polish and English are spoken by many Israelis. The
change in structure of the possessive constructions will, accordingly,
involve the reanalysis of the possessed NP as a non-subject, if not as
a direct object, and it could potentially also involve the reanalysis of
the possessor nominal as the subject.

We have seen that the possessed nominal in CIH is in the process
of losing its subject properties. It is impossible, however, to establish
whether it has become a direct object in those instances where it is no
longer subject, since all the tests which are relevant to direct object-
hood would be inapplicable in the possessive constructions in Hebrew.
Thus, passive, which is the prime example of a rule that only applies to
direct objects in Hebrew, cannot apply in such possessive constructions,
and dative movement, which ordinarily creates a direct object out of
an indirect object, is not operative in Hebrew at all. With regard to
the potential reanalysis of the possessor nominal as subject on the model
of the European languages (as mentioned in 26), I would like to suggest
that there may be some tendency to reanalyze the possessor NP as the sub-
ject but that a total reanalysis in terms of subject coding properties--
namely, position, case marking and control over verb agreement--is unlike-
ly.[20]

    5.2 On Possessor Nominals

    Although Hebrew is a relatively free word order language which

allows for various topicalizations of non-subjects to sentence in-
itial position, there seems to be a difference in the degree of marked-
ness of the word order between sentences like 27, where the possessor
nominal occurs sentence initially and sentences like 28 where the indirect
object has been topicalized. Compare:

```
27      ledani hayu tamid štey    mexoniyot
        to Dani were always two   cars
        'Dan always had two cars.'
28      ledani  natati         et       hasefer
        to Dani (I)gave  acc. mark.    the book
```

Sentence 27 sounds much less marked than 28; it needs less of a con-
trastive or list-like context. It may, therefore, be plausible to
assume that sentences like 27, where the possessor nominal occurs
sentence initially, suggest that the possessor nominal is in the process
of acquiring the coding properties of the subject. It has, in this
instance, acquired subject position.[21]Concerning the other two coding
properties of the subject--case marking and control over verb agreement,
the possessor nominal in the possessive constructions does not exemplify
them. It is interesting to observe what would happen if the possessor
nominal were to lose its dative case marking, and to assume the nomi-
native case marking and control over verb agreement. Due to a partial
identity between have and be in Hebrew, sentences where the possessor
nominal were to exemplify all the subject coding properties (position,
case and control over verb agreement) would be ambiguous between a pos-
sessive and a non--possessive reading (where the non-possessive reading
would often be semantically odd). Thus from:

```
29a.    ledani    hayu tamid štey mexoniyot
        to Dani   were  always two cars
        'Dani always had two cars.'
```
we would get
```
   b.   dani  haya tamid štey    mexaniyot
        Dani was always two cars
        'Dan always was two cars.'  (existing)
        'Dan always had two cars.'  (potential)
```

The potentially intolerable ambiguity, I would like to suggest, may
make any further reanalysis of the possessor nominal as the subject
unlikely. The possessor nominal may gain more prominence in subject
position, but I do not believe that it will assume the other coding
properties of the subject.

        If the PH is to have an empirical validity in the possible reanaly-
sis of the possessor nominal, then the prediction would be that since
the possessor nominal has not acquired all the subject coding properties,
it should not manifest subject behavior properties. This prediction is
indeed borne out as the sentences in 30 and 31 indicate. The posses-
sor nominal cannot be the victim of equi NP deletion (cf. 30) nor can
it be raised by subject raising (see sentence 31b.). Consider:

30a. dani hexlit [iye ledani meil or miyisrael]
    Dani decided will be to Dani (a) coat leather from Israel
    'Dan decided [Dan will have a leather coat from Israel].'
  b. *dani hexlit liyot meil or miyisrael
    Dani decided to be (a) coat leather from Israel
    'Dan decided to be a leather coat from Israel.'

(The sentence is starred in the possessive sense only. Note the potential ambiguity as in 29b.) and

31a. iye ledani meil or miyisrael
    will be to Dani(a) coat leather from Israel
    'Dani will have a leather coat from Israel.'
  b. *dani yatxil liyot meil or miyisrael
        will start to be (a) coat leather from Israel
        yamšix
        will continue
        asuy
        is likely
        alul
        is liable
    'Dan will start continue to be a leather coat from Israel.'
        is likely liable

(here, again, the sentence is starred in the possessive reading.)

    To sum up, I have offered here a diachronic analysis of certain possessive constructions in CIH, and showed that the PH is not only synchronically relevant, but is also reflected in a diachronic process in CIH.

FOOTNOTES

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1. The nominative case has no overt morphological manifestation in Hebrew. However in instances where the NP is definite, nominative NPs are the only NPs that are not associated with overt case marking. cf. sentences 7a-d in the text.

2. I have cited these examples in the past tense, since in the present tense in such possessive constructions the suppletive form of be is the invariable particle yeš. The facts about verb agreement would thus

not be clear were I to use the present tense in these sentences.

3. It may be argued on the basis of examples like those in 3, that the noun phrase which governs verb agreement in Modern Hebrew is not the subject, but rather it is the noun phrase in the nominative case. However, sentences such as the following

> (i)   karu   šam   et   otam haasonot   gam   lifney šana.
>   happened there acc. them the disasters also before a year
>   (pl.)   mark.
>   'The same disasters occurred there a year ago too.'
> (ii) nolda   lo   hašavua tabat   hašlišit
>   was born(f) to him the week acc. mark. the girl the third
>   'His third daughter was born this week.'

where the verb agrees with the noun phrase in the accusative case indi-cate that the nominative case is not the factor governing verb agreement.

4. See, for example, Ben Horin (1976) and Givón (1976) for some pragmatic conditions on word order in Modern Hebrew.

5. It should be mentioned, incidentally, that the distribution of et is in fact more complicated than that; in some instances et occurs before what appear to be indefinite NP's. Consider:

> (i)   et   mi   pagašta   bamsiba?
>   acc. mark. who (you) met at the party
>   'Who did you meet at the party?'

In this connection it was noted in Cole (1976) that the conditioning factor can't be specificity rather than definiteness. I cannot, however, provide a more insightful characterization of the distribution of et, at the present time.

6. Grammarians and educators have tried time and again to uproot the occurrence of the accusative marker et in possessive constructions where the possessed nominal is definite. Thus such statements as the one in (i)

> (i)   Don't say: yeš   li   kvar   et   hakartisim.
>   existential to me already acc.mark. the tickets
>   'I have the tickets already.'
>   Use the correct form: yeš li   kvar   hakartisim.
>   without the superfluous et.

are abundant in grammar books. (See for example Sivan 1969, Ben-Or 1959, Bahat and Ron 1972).

The existence of such explicit instructions serves as evidence that indeed the CIH speakers do utter the possessive constructions with the accusative marker et whenever the possessed nominal is definite. For, if speakers had not used such constructions with et, statements like the one

in (i) would be meaningless and superfluous. Educators wish to uproot only those mistakes which people actually make; they do not introduce non-existent forms and warn against their use in speech.

7. The fact that the pronoun subject referring to the possessed nominal occurs sentence initially in 9b, unlike its non-initial location in the possessive construction where the possessed nominal is a full, non pronominal NP, is due to the absence in CIH of subject-verb inversion where the subject is a pronoun.

The question might be asked whether sentences such as 9b are not well-formed in NLH. As I have claimed, the possessed nominal functions as the subject in NLH and our expectations would therefore be that such sentences, where the nominative pronoun is used to refer to the subject, should be well-formed. It turns out that such sentences are not used in NLH, but sentences like

    (i)   hu   haya   beyadi   kimat xodeš.
          he(nom.) was in my hand almost a month

are used instead. The use of the locative expression 'in my hand' to refer to my having it, suggests an alternative way to express the possessive idea, and its existence might explain the non-existence of 9b in NLH. Note, incidentally, that once a locative expression is introduced to sentences like 9b, they become well-formed. Consider:

    (ii) hu haya li   bamisrad.
         he was to me in the office.'
    'I had it in my office.'

However, I would like to claim that such sentences do not express true possession, they are in fact instances of locative statements. Thus (ii) is actually a statement about the location of the object in question, not about my possessing it.

8. The question here, as in the case of pronominalization (cf. ft. 7) is whether such sentences as 10b cannot be accepted in NLH. The answer is negative, but the reason is not the non-nominative status of the relevant NP, but rather the violation of the NLH relativization technique; NLH does not relativize a NP in the nominative case utilizing the pronoun retention technique. When the NP is in the nominative it is relativized by deletion of its referent in the relative clause.

Note, incidentally, that the deletion strategy of relativization, although more apt in such constructions, will have no bearing on the issue at hand. Both nominative and accusative NP's can be deleted by this procedure, and thus sentences like

    (i)   ze   hasefer šehaya li.
         this the book that was to me
         'This is the book that I had.'

will provide no evidence one way or the other as to the status of the
possessed nominal.

9. This type of neutralization of verb agreement is in accordance with
Greenberg's observation (1963:94) that in many languages when the verb is
not in agreement with any term in the sentence it assumes the singular
form. Keenan cites examples from Welsh, Latin, German, Finnish, Polish,
Spanish and Arosi passive constructions which show that when the verb
does not agree with any NP in the sentence it occurs in third person
singular. (All the examples are cited in an earlier version of his 1976
paper, presented at the winter meeting of the Linguistic Society of America
in 1974. Only the first three examples are cited in the 1976 version of
the paper.)

10. The difference with respect to control over verb agreement between
relative clauses with pronoun retention (i) and relative clauses that
utilize the deletion technique (ii) indicates that indeed the overtness
of the accusative case marker affects the degree of loss of control
over verb agreement. Consider:

```
                                  šehayta          li      ota
                                  that  was(f)     to me   her
(i)a *zot      hasimla            (še)   ota      hayta    li
     this(f) the dress(f)         that her (acc) was  (f.sg) to me
     kšehayiti   ktana.
     when(I)was little
                                  še  haya     li      ota
                                  that was(m)  to me   her
   b  zot    hasimla             (še) ota      haya    li  \ . . .
      this(f) the dress(f)        that her (acc)  was     to me
```

The ill-formedness of sentences such as i.a indicates that when
the possessed nominal occurs in the accusative case the verb cannot
agree with the possessed nominal. The verb, thus, assumes the third
person masculine singular form, as in .i.b. However, in relative clauses
where deletion rather than pronoun retention is employed, there is no
overt clue that the possessed nominal occurs in the accusative case. In
such sentences we find that the verb may or may not agree with the possessed
nominal. Consider:

```
(ii)a  Zot       hasimla      šehayta       li     kšehayiti   ktana.
       this (f) the dress(f)  that was(f)  to me when (I) was little
     b  Zot       hasimla      šehaya       li     kšehayiti   ktana.
                               that was(m)
```

Let me note here, however, that sentences like ii.b were judged by
several speakers to be somewhat sub-standard. This reaction, together
with the well-formedness of ii.a may indicate that the loss of control
over verb agreement by the possessed nominal is just in its initial
stages in cases where there is no overt evidence that the possessed nomi-
nal occurs in the accusative case.

11. Note that I am not claiming that the order has actually been changed from SV to VS in such possessive constructions. It may well be the case that the possessed nominal has always occurred following the verb (Notice, in this connection, that Hebrew is still considered by various grammarians as a VSO language.) It is irrelevant for our present purposes to discover whether such possessive constructions in fact involve a change of the original VS to SV at some point (to accord with the grammaticized SVO order) and then back to the present VS order displayed by possessive constructions. The important factor is that in Modern Hebrew (both NLH and CIH) the SV order has been grammaticized and the VS order in the possessive constructions manifests lack of the character-istic subject position sentence initially.

12. Passivization which usually serves as a behavioral test for sub-jecthood, cannot apply to the possessive constructions in Hebrew.

13. I would like to entertain the idea that reflexivization may bear on the subjecthood of the possessed nominal.
    [I am referring here to regular reflexive forms not to the intensive reflexives which are semantically and syntactically distinct from regular reflexives. (In this context see Leskosky 1972.)]
    The factor conditioning reflexivization in Hebrew seems not to be just left to right order, rather it seems that subjecthood is involved as a relevant factor as well. The difference in grammaticality between the NLH possessive construction in (i) and the CIH possessive construc-tion in (ii)

    (i) eyn   lo adam   baolam. *yeš   lo   acmo bilvad.
         there to him a person in the   there to him himself only
         is not   world   is
    (ii) eyn   lo šum davar baolam.   yeš lo rak et acmo.
         there is to anything in the world there to only acc. himself
         not   him (no one)   iš   him   mark.
         'He had (got) { nothing { in this world. He has only (got)himsel

could be attributed to the difference in the subject status of the possessed nominal. If the restriction on reflexivization in Hebrew were such that subjects could not be reflexivized, then the ill-formed-ness of (i) would indicate that the possessed nominal functions as subject with respect to reflexivization in NLH, and the well-formedness of (ii) would indicate that the possessed nominal does not function as subject with respect to reflexivization in CIH.
    Note that the underlying assumption here is that the same restric-tions on reflexivization hold for NLH and for CIH.

14. Subject raising to object position, to the extent that it is opera-tive in Modern Hebrew, is restricted in such a way as to make it impossible to examine the subject status of the possessed nominal. (So far the most likely candidates for a subject raising to object position analysis are sentences such as:

(i) xašavti   et   ze   lebilti ěfsari
    (I)thought acc.mark. this to not   possible
    'I considered it to be impossible.'

The restriction on the rule is that the complement can only have predicate nominal or predicate adjective.)

15. Note that whether the definite possessed NP denotes a specific referent as in 21a or a generic one as in 21b--the same situation obtains.
    Let me also note here that the distinction between the following sentences a and b is especially enlightening in this connection. Compare:

```
    a  hasefer haze    omed    (is about)  ⎫ liyot basifria bekarov.
       the book the   ⎧ yatxil  (will start) to be in the library soon
              this    ⎨ yafsik  (will stop)  ⎬
                      ⎩ asuy    (is likely)  ⎭
and b???hasefer haze   ⎧ omed     liyot   li   bekarov.
       the book the    ⎪ yatxil   to be to me  soon
              this     ⎨ yafsik ⎬
                       ⎩ asuy   ⎭
```

The subject of the locative sentence in (a) can easily undergo subject raising, the possessed nominal in (b), however, can hardly, if at all, be raised by this rule. Note too, in this context, that sentence (c) (following), which on the surface appears like a possessive construction, is actually a locative sentence, and as such it allows subject raising of the book.

c hasefer haze   omed   liyot li babayit   kekarov.
   the book the this is about to be to me at home soon
   'I will soon have this book at home.'

16. Likewise, we have seen that the possessed nominal in CIH could be reflexivized (cf. sentence (ii) ft. 13), a fact which suggested that it does not function as subject with respect to reflexivization. Since reflexivizable NP's must necessarily be definite, the fact that the possessed nominal could be reflexivized indicates that when it is definite the possessed nominal lacks some crucial subject properties.

17. I would like to mention in this context an interesting observation which was brought to my attention by Lloyd Anderson. The difference in behavior between the definite and the indefinite possessed nominals that has been discussed here seems to constitute an exception to their be-havior elsewhere. Thus, it is an established fact that more often than not subjects tend to be definite. However, the evidence from CIH indicates that definite NP's lose their subject status sooner than indefinite NP's do. Thus Hebrew specific phenomena, such as the restrictions on the distribution of the accusative marker et, may account for the exceptional characteristics that definite and indefinite NP's reveal in Hebrew.

18. The characterization of the properties that are relevant for the application of equi NP deletion evades me, at the moment. Note that notions like 'control over the activity' or 'volitionality' which suggest themselves as potential candidates for determining when a given subject would be able to undergo equi NP deletion, would not accurately characterize the distribution of equi. Although, lack of control over the activity, or lack of volitionality could explain the ill-formedness of:

    (i) *hasefer haze   lo   raca   liyot   li.
        the book the this not wanted to be to me
        'This book did not want to be mine.'

it would make the wrong prediction with respect to:

    (ii) hasefer   haze   lo   raca   liyot šayax li.
         the book the this not wanted to be belong to me
         'This book did not want to belong to me.'

The expectation that a sentence like (ii), which is semantically similar to (i), would be ill-formed on the same grounds that (i) is ill-formed is not borne out. (ii) is a flawless sentence. It, thus, seems that the property relevant for the application of equi NP deletion is not simply 'volition' or 'control over the activity.'

    Let me mention in this context, that two other studies of subject properties Keenan (1976) and Sridhar (1976) have reported that equi could not apply to certain otherwise subject-like NP's. These observations about Jacaltec (Keenan) and Kannada (Sridhar) suggest too that equi NP deletion is restricted to subjects possessing some special properties.

19. If reflexivization in fact had a bearing on subjecthood (cf. ft. 13) then the difference between the following sentences would be relevant to the problem at hand. Consider:

    a *hayu lahem rak   acmam
      were to them only themselves 'They had only themselves'
    b *hayu lahem rak et   acmam
      were   acc.mark.
    c *haya lahem rak   acmam
      was
    d haya lahem rak et acmam
      was

    The only acceptable sentence, (d) is the one where the possessed nominal exemplifies loss of the nominative case, loss of control over verb agreement and reflexivization. None of the other sentences, where the possessed nominal has been reflexivized but where its coding properties have not been lost, is well-formed. This suggests, at the least, that loss of subject behavior properties (in this instance the ability to be reflexivized) cannot be overtly manifested when the NP in question still retains its coding properties. In this connection note, too, that in CIH the non-intensive reflexives always occur with either a preposition

or the accusative marker et, this suggests that they do not manifest
subject case marking. It may, thus, be argued that sentences (a) and
(c) are ill-formed because the reflexive pronoun in them occurs without
any preposition or et, counter to its regular distribution in CIH.
In this case, only (b) and (d) would be relevant to the problem at hand.
The question to be asked then is: why does (b) exemplify such low degree
of acceptability as to be totally ill-formed? If it were the case that
the ill-formedness of (b) were due only to the fact that it does not yet
manifest loss of control over verb agreement, then the degree of gramma-
ticality of (b) would be considerably higher than it is in fact; we would
expect it to be of questionable acceptability (cf. section 3.3). The
fact that (b) is totally ill-formed indicates what I have suggested above,
that loss of subject behavior properties (here, the applicability of
reflexivization) had been operative in (b) before the last coding property
(control over verb agreement) was lost.

20. Another possible reason for the reanalysis in the status of the
possessed nominal might be simply an error on the part of speakers. Since
CIH is an SVO language, a post verbal NP is generally not interpreted as
the subject. Thus, speakers might come up with an overgeneralization of
the et insertion rule which states, roughly: Any postvergal NP which is
definite and which is not associated with any other preposition has to be
preceded by et.
    There are two major problems with such an explanation. First, the
overgeneralization of et insertion predicts that the subjects in sentences
like (i) will be preceded by et, since they occur post-verbally. How-
ever, the ill-formedness of i.a and i.b indicates that this is not the
case. Consider:

    (i)a *nixnesa lekan   ˙et haxavera šel axi.
          entered to here ·taxavera   of my brother
                              acc. the friend(f)
        'My brother's girl friend just came in here.'
      b *baa elay   et   haxavera   šeli meangliya
        came to me acc. mark. the friend(f) my from England
        etmol   balayla.
        yesterday at night
        'My friend from England came to me last night.'

    If we attempt to save the analysis, by accounting for the ill-
formedness of the sentences in (i) in terms of rule ordering, [e.g. et in-
sertion has to precede subject-predicate inversion, and at the point
in the derivation of sentences like (i) where et insertion has to apply
its structural description is not met (since there is no definite NP
post-verbally)] then we would not be able to account for the occurrence
of et in the colloquial (or maybe slangy) expressions in (ii), where sub-
ject-predicate inversion seems to have applied as well, and yet et has
been inserted.

(ii)a parca sam ᵛ et hasrefa⟩ haxi gdola bair.
      broke there ┆ tasrefa   the   big   in the city
             ⎰ the fire ⎰ most
      'The biggest fire in the city broke out there.'
   b kara   šam et oto   haason   gam   bašana   šeavra
      happened   there the same ⎰disaster⎰ also in the year that passed
                       ⎰accident⎰

Second, an attempt to account for the reanalysis solely in terms of the
overgeneralization of et insertion will be unable to provide an explana-
tion both for the partial reanalysis of the indefinite possessed nominal
(recall that in some instances it has ceased to control verb agreement),
and it would be unable to account for further developments in the change
of status of the possessed nominal, and the reanalysis of the possessive
construction as a whole. It thus seems that an over-generalization of
et insertion does not provide a satisfactory explanation for the reanalysis.

21. It should be noted here that the occurrence of the possessor nominal
sentence initially is restricted to non-pronominal NP's unless the posses-
sor nominal is used as either topic or focus.

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CLAUSE UNION AND RELATIONAL GRAMMAR:
EVIDENCE FROM HEBREW AND KANNADA

Peter Cole and S.N. Sridhar

Causative constructions have been a matter of continuing interest for generative grammarians, but current concern with grammatical relations and 'relational grammar' has heightened this interest. A number of recent studies (Aissen 1974, Cole 1976, Comrie 1976a inter alia) have examined how the rule of clause union (CU), a rule typically found in causative constructions, affects the grammatical relations of the noun phrases within the scope of the rule. The purpose of this paper is to evaluate a simple and elegant hypothesis regarding the effect of the rule on the underlying complement subject (UCS). According to this hypothesis, CU specifies the derived grammatical relation of the CS in the same way in all languages. All divergences among languages in terms of the surface grammatical relation of this phrase are due to the application of some other rule affecting grammatical relations either prior or subsequent to the application of CU. We shall term this hypothesis, first proposed, we believe by Perlmutter and Postal (1974),[1] the Invariant Output Hypothesis (IOH). IOH is to be contrasted with such proposals as those of Cole (1976) and Comrie, (1976a) who have suggested that the output of CU varies from language to language. We shall argue that there is evidence that IOH makes incorrect predictions and must be abandoned.

It will be assumed throughout this paper that the input to CU is a bisentential structure like (1) and the output is a unisentential structure like (2).[2]
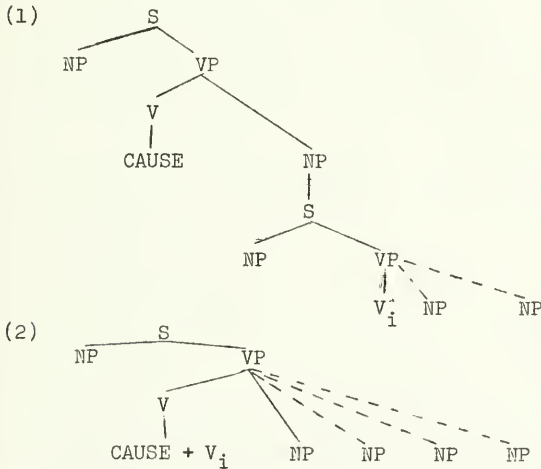
In addition to reducing two clauses to one, IOH claims that CU specifies the derived grammatical relation of the UCS. It is proposed that when the complement clause is intransitive the UCS always becomes the derived matrix direct object (DMDO) in the output of CU. When the complement clause is transitive, it is claimed the UCS is specified as the derived matrix indirect object (DMIO).

It is easy to find languages in which CU appears to work in the way predicted by IOH, for instance, example (3) from Italian shows that the UCS of an intransitive verb becomes DMDO in the output of the rule.[3]

(3) a. Maria fa si che Gianni (subj) scriva.
         Maria makes that Johnny   write
     b. Maria fa scrivere Gianni (DO).
         Maria makes to write Johnny
         'Maria makes Johnny write.'

In example (4) the UCS of a transitive verb becomes the DMIO.

(4) a. Maria fa si che Gianni (subj) scriva la lettera (DO).
         Maria makes that Johnny   write the letter.
     b. Maria fa scrivere la lettera (DO) a Gianni (IO).
         Maria makes to write the letter to Johnny.
         'Maria makes Johnny write the letter.'

Although IOH accounts for much of the known data, regarding CU, there are also a significant number of instances of CU that do not at least appear to conform to this analysis. For example, in Hebrew (both modern and Biblical), the UCS often shows up as a MDO in derived structure.[4] This is illustrated in (5),

(5) Hirkadeti   et hatalmidim $\begin{Bmatrix} \text{et harikud} \\ \text{barikud} \end{Bmatrix}$ haxadaš.
                  *latalmidim
     (I) caused to dance acc. the students $\begin{Bmatrix} \text{acc.} \\ \text{ob.} \end{Bmatrix}$ the dance $\}$ the new
                  *dat.
     'I made the students dance the new dance.'
which is derived from a bisentential structure along the lines of (6).

(6)
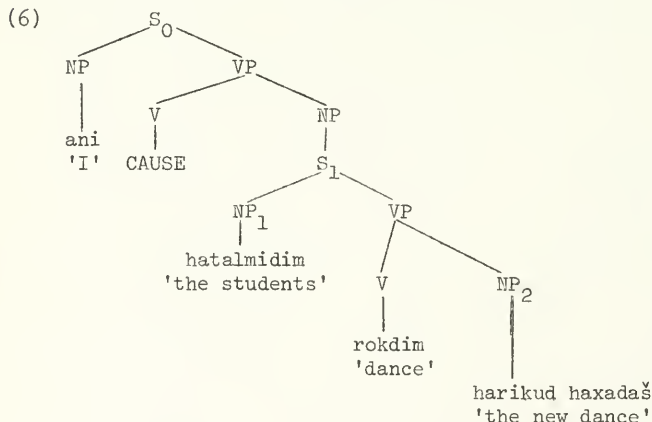
Example (5) is an apparent counter-example to IOH because the UCS of a transitive verb appears as a MDO rather than a MIO in derived structure.

Another type of apparent counter-example to IOH is found frequently in South Asian languages. In Kannada, a major Dravidian language, the UCS appears as a derived instrumental (DI). (But see note 10.) Example (7) illustrates a simple transitive sentence and (8) the causative version of that sentence.

(7) Kāryadarshiyu   Ī vishayavannu horageḍahidaru.
    secretary (nom) this matter (acc)   revealed
    'The secretary revealed this fact.'
(8) Sačivaru {kāryadarshiyinda}   Ī vishayavannu   horageḍahisidaru.
              {*kāryadarshige }
    minister secretary (instru)   this matter caused to reveal
                      (*dative)
    'The minister made the secretary reveal this fact.'

Note that in (8) the UCS must appear as instrumental rather than as dative.
    Often apparent counter-examples to a linguistic generalization turn
out to be due to the interaction of some extraneous process with the phe-
nomenon of central interest. This, it might be suggested, is the case with
regard to sentences like (5) and (8). Such seeming counter-examples might
be claimed to be the result of the application of relation changing rules
before or after CU. Specifically, the hypothesis will be examined that the
appearance of CSs of transitive verbs as MDOs in languages like Hebrew results
from the application of dative movement (DM) to the output of CU. DM is a
rule by means of which IOs usurp the grammatical relation of DOs. An
example of DM in Persian is given in (9).[5]

(9) a. Input to DM
        Parviz sib-i be-bače dad.
        Parviz apple-a to-child gave
        'Parviz gave an apple to the child.'
    b. Output of DM
        Parviz bače-ra   sib-i   dad.
        Parviz child-acc apple-a gave
        'Parviz gave the child an apple.'

According to IOH, sentences like (5) in Hebrew are derived by the obligatory
application of DM to an (unattested) intermediate structure like (10).

(10) *ani   hirkadeti   latalmidim   et harikud   haxadaš.
     I caused to dance dat. the student acc the new dance.

    Apparent counter-examples like (8) in Kannada are explained in terms
of the interaction of passive and CU. According to IOH, sentences like
(8) result from the obligatory application of passive on the complement
cycle, converting (7) into (11).

(11)[6] *Kāryadarshiyinda Ī vishayavu horageḍahal paṭṭitu.
        secretary (instru) this matter (nom) reveal-pass-past
        'This fact was revealed by the secretary.'

    Note that the output of passive is a derived intransitive clause.
Thus, when CU is applied on the matrix cycle, Ī vishaya, the derived CS,
becomes the MDO, and the UCS, no longer a subject at the stage in the deri-
vation when CU applies, retains its instrumental status. The result is (8).

(8) Sačivaru {kāryadarshiyinda}   Ī vishayavannu   horageḍahisidaru.
              {*karyadarshige }
    minister secretary (instru)   this matter caused to reveal
                      (*dative)

While there may be languages in which outputs analogous to (5) and (8) result from the kind of rule interaction just outlined,[7] such derivations cannot be extended to all languages. In particular, we argue, Hebrew and Kannada cannot be analysed in a manner compatible with IOH. This serious- ly undermines the hypothesis that the UCS of a transitive clause invariably becomes the DMIO, and suggests that a different approach to CU may be in order. We shall discuss the evidence from Hebrew first and then the evidence from Kannada.

We noted earlier that according to IOH the unattested (10) is claimed to be the output of CU.

(10) *ani hirkadeti latalmidim et harikud haxadaš.
      I caused to dance dat the student acc the new dance.

DM applies to (10) obligatorily, yielding (5). The rationale for this derivation is the notion that the multiplicity of apparent outputs of CU cross-linguistically is explicable without the need for complicating the statement of the rule of CU. The apparent complications are due to the interaction of CU and a putative independently motivated rule of the language in question, namely DM.

Unfortunately for this elegant analysis, DM is not independently attested in Hebrew. The kinds of alternations which constitute prima facie (though not conclusive) evidence for DM are not found in the lan- guage. For instance, although the order of direct and indirect objects in Hebrew may vary under certain discourse conditions, case marking is not affected - as it is in genuine instances of DM. Compare Persian (9) (repeated below) with an analogous example from Hebrew, (12).

(9)   a. Input to DM
          Parviz sib-i be-bače dad.
          Parviz apple-a to-child gave
          'Parviz gave an apple to the child.'
      b. Output of DM
          Parviz bače-ra sib-i dad.
          Parviz child acc apple a gave
          'Parviz gave the child an apple.'
(12) a. Hem šalxu et hasefer leMiriam..
          they sent acc the book dat Miriam
          'They sent the book to Miriam.'
      b. Hem šalxu leMiriam et hasefer.
          They sent dat. Miriam acc the book
      c.[8] *Hem šalxu et Miriam hasefer.
          they sent acc Miriam the book

The sentence analogous to (9b) in Persian, (12c), is ungrammatical in Hebrew.

Another prima facie test for DM is passivization. Passivization in both Persian and Hebrew is generally restricted to DOs. But in Persian those verbs that undergo the alternation in case seen in (9) also allow the passivization of UIOs. Compare Persian (13) with Hebrew (14).

(13) a. Sib be-bače dade šod.
apple dat child given was
'The apple was given to the child.'
(Derived from (9a).)

b. Bače sib dade šod.
child apple given was
'The child was given the apple.'
(Derived from (9b).)

(14) a. Hasefer nišlax leMiriam.
the book passive sent dat Miriam
'The book was sent to Miriam.

b. *Miriam nišlexa (et) hasefer.
Miriam passive sent (acc) the book

Thus, Hebrew, unlike Persian, lacks the distributional properties that give credence to the claim that the grammar of that language contains a rule of DM.[9]

We will turn now to Kannada. It will be remembered that for many verbs in Kannada, the UCS of a transitive clause is marked as instrumental. According to IOH, sentences like (8) are derived by the application of passive on the complement cycle, thereby demoting the UCS to instrumental, and promoting the UCDO to DCS. On the matrix cycle the DCS becomes DMDO as a result of CU. The sentences illustrating this derivation are repeated here for the convenience of the reader as (15).

(15) a. Underlying Complement:
Kāryadarshiyu   ī   vishayavannu   horagedahidaru.
secretary (nom) this   matter (acc)   revealed
'The secretary revealed this fact.'

b. Output of Passive on the Complement Cycle:
*Kāryadarshiyinda   ī   vishayavu   horagedahal pattitu.
secretary (instru) this   matter(nom)   reveal-pass-past
'This fact was revealed by the secretary.'

c. Output of CU on the Matrix Cycle:
Sačivaru   ⎰kāryadarshivinda⎱   ī vishayavannu   horagedahisidaru.
           ⎱*karyadarshige ⎰
minister secretary   (instru) this   matter   caused to reveal
                          (*dative)
'The minister made the secretary reveal this fact.'

Such a derivation appears intuitively unnatural to native speakers of Kannada because passive sentences are considered somewhat abnormal in colloquial Kannada, while causative sentences like (8) are both normal and common. The unnaturalness of passives in Kannada has been remarked upon by Caldwell (1856: 463-7), Dharwarkar (1951: 274-81), Spenser (1914: 202-3) and Srikanthaiah (1960: 209), among others. Furthermore, passives in which the agent is expressed are less felicitous than those in which the agent is deleted.

The intuition of native speakers is corroborated by syntactic evidence of two sorts: restrictions on passivization, and case marking. We shall discuss restrictions on passivization first. Although passives are generally avoided in colloquial Kannada, they are found in certain literary styles such as journalistic writing. An instance of grammatical passivization is given in (16).

(16) a. Active:
          Darjiyu   batteyannu holedanu.
          tailor (nom) cloth acc stitch - past
          'The tailor stitched the cloth.'
      b. Passive:
          Darjiyinda   batte   holeyalpattitu..
          tailor (instru)   cloth   stitch + pass + past
          'The cloth was stitched by the tailor.'

In contrast to such verbs as <u>holi</u> 'stitch', certain verbs such as <u>horagedahu</u> 'reveal' and <u>huduku</u> 'search' fail to undergo passivization regardless of stylistic level. The ungrammaticality of passivizing <u>horagedahu</u> was seen in (11).

(11) *Kāryadarshiyinda ī vishayavu horagedahal pattitu.
      secretary (instru) this matter (nom) reveal-pass-past
      'This fact was revealed by the secretary.'

An example with <u>huduku</u> 'search' is given in (17).

(17) a. Active:
          Mangagalu   sīteyannu   hudukiduvu.
          monkeys (nom)   Sita (acc)   searched
          'The monkeys searched for Sita.'
      b. Passive:
          *Sīteyu   mangagalinda   hudukalpattalu
          Sita (nom)   monkeys (instru)   search + pass + past
          'Sita was searched for by the monkeys.'

It will be remembered that according to IOH, passive applies obligatorily in the derivation of CU causatives. Such a claim makes certain empirical predictions. A verb which, for some reason, cannot undergo passivization should not be able to undergo CU (yielding a DI). This is because, according to IOH, passive is an intermediate step in the derivation of causatives in which the UCS appears as an instrumental in derived structure.[10] Thus, IOH predicts that the causative counterparts of (11) and (17) are ungrammatical. But these sentences are fully grammatical, as was seen in (8) (repeated here) for <u>horagedahu</u> 'reveal', and as is seen in (18) for <u>huduku</u> 'search'.

(8) Sačivaru {kāryadarshiyinda}   ī vishayavannu horagedahisidaru.
               {*karyadarshige }
     minister secretary (instru) this matter   caused to reveal
                                  (*dative)
     'The minister made the secretary reveal this fact.'
(18) Rāmanu   mangagalinda   sīteyannu   hudkisidanu.
     Rama (nom)   monkeys (instru) Sita (acc)   caused to search
     'Rama made the monkeys search for sita.'

In general, there is no correlation between restrictions on passive and restrictions on CU causatives. This appears to us to run completely counter to the hypothesis that passivization is an intermediate step in the derivation of causatives like (8) and (18).
    Our second argument against the hypothesis that passive is involved in the derivation of causatives in Kannada has to do with case marking.

We shall first present certain facts about case marking in Kannada that
are important for our argument. We shall then show how these facts militate
against IOH. In general DOs receive accusative case marking in Kannada.
(The accusative marking may be optionally deleted, but that is beside the
point.) But some verbs, such as hodi 'hit', bai 'scold' and avamāna māḍu
'insult' may take either dative or accusative objects, as illustrated in
the examples (19)-(21):

(19) Ramanu   {Krishṇannu}   hoḍedanu.
                {Krishṇanige} {acc}
      Rama (nom)   Krishna {dat}   hit
      'Rama hit Krishna.'

(20) Appa   {maganannu}   baidaru.
                {maganige}   {acc}
      father (nom)   son   {dat}   scolded
      'Father scolded his son.'

(21) Rāyaru   {ninnannu}   avamānā māḍidare?
                {ninage} {acc}
      Rao (nom)   you   {dat}   insult   did + Q
      'Did Rao insult you?'

The possibility of taking a dative object must be specified in the lexical
entry for each of these verbs.

     We shall now turn to the relevance of these facts to the determination
of whether passive applies in the derivation of causatives in Kannada. We
would like to contrast two derivations for causatives like (8), one in
which passive applies on the complement cycle (the IOH derivation), and
one in which CU applies directly to the complement without passivization
as an intermediate stage in the derivation (our position). The passive
and the non-passive derivations differ in a significant way which we
would like to emphasize. In the passive derivation of (8) the UCDO changes
its grammatical relation twice: once, as a result of complement cycle
passivization, from CDO to CS, and then, as a result of matrix cycle CU,
from CS to MDO. In contrast, in the non-passive derivation of (8), the
CDO does not change its status as DO at any point in the derivation.
It remains a DO despite the reduction of the bisentential underlying
structure to a unisentential derived structure. The two derivations are
presented schematically in (22) and (23).

(22) Passive (IOH) Derivation
      a. Complement Cycle:
          Underlying Complement Direct Object ⟶ Derived Complement Object
          Complement Subject ⟶ Instrumental
      b. Matix Cycle:
          Derived Complement Subject ⟶ Matrix Direct Object
          (Instrumental unaffected)
(23) Non-Passive Derivation
      a. Complement Cycle:
          no changes
      b. Matrix Cycle:
          Underlying Complement Subject ⟶ Instrumental

We have seen that according to (22) (the IOH derivation), in the
input of CU, the noun phrase that originated as CDO is the subject of
a derived intransitive verb. Subjects of intransitive complements become
MDOs in the output of CU. On the basis of their derived grammatical re-
lations, such noun phrases can only receive accusative case. The under-
lying lexically specified variation between dative and accusative seen in
(19-21) would not be found in causatives of verbs like hoḍi 'hit,' bai
'scold' and avamāna māḍu 'insult'. It should be noted that in Kannada,
unlike Germanic languages, objects of verbs taking dative objects do not
retain dative case when promoted by a rule changing their grammatical re-
lations. To consider an example, one such a rule is passive. Note that
the derived subject in (24), the passive variant of (19), is marked nomi-
native and not dative or accusative.

(19)　Ramanu　$\begin{Bmatrix}\text{Krishṇannu}\\\text{Krishṇanige}\end{Bmatrix}$　hoḍedanu.
　　　Rama (nom)　Krishna $\begin{Bmatrix}\text{acc}\\\text{dat}\end{Bmatrix}$　hit

　　　'Rama hit Krishna.'

(24)　Ramaninda　　　　krishnanu　　　　hoḍeyalpaṭṭanu.
　　　Rama (instru)　　Krishna (nom)　　hit-pass-past
　　　'Krishna was hit by Rama.'

Thus on the basis of (22), it would be predicted that in derived
structure, that UDOs of the verbs in question would receive accusative
case and not dative.

In contrast to (22), (23) (the non-passive derivation) predicts that
a complement object would have the same case marking possibilities in
derived structure as in underlying structure. This is because the status
of the CDO does not change in (23). Therefore, the same factors that
determine case in non-causative sentences would determine it in causa-
tive sentences. If a given simple (=noncausative) verb allows a choice
between dative and accusative objects, the same choice should be available
for the objects of the analogous causative verb.

We have seen that an analysis involving intermediate passivization
makes predictions regarding derived case that are different from those
made by an analysis that does not involve intermediate passivization. The
facts support the non-passive analysis. Both dative and accusative
objects are possible with hoḍesu 'cause to hit', baiyisu 'cause to schold',
and avamāna māḍisu 'cause to insult'. This is illustrated in (25).

(25)　a.　Mēshtru　　　rāmaninda　　　Krishnan $\begin{Bmatrix}\text{annu}\\\text{ige}\end{Bmatrix}\begin{Bmatrix}\text{acc}\\\text{dat}\end{Bmatrix}$　hoḍesidaru.
　　　　　teacher　　　Rama (instr)　　Krishna　　　　　cause hit + pt.

　　　　　The teacher made Rama hit Krishna.

　　　b.　Amma　　　　appaninda　　　magan- $\begin{Bmatrix}\text{-annu}\\\text{-ige}\end{Bmatrix}\begin{Bmatrix}\text{acc}\\\text{dat}\end{Bmatrix}$　baiyisidalu.
　　　　　Mother　　　Father (instr)　　son　　　　　　　cause-scold-pt.

　　　　　Mother made Father scold the son.

　　　c.　Rāyaru　tamma　　javānaninda　　nim- $\begin{Bmatrix}\text{-mannu}\\\text{-age}\end{Bmatrix}\begin{Bmatrix}\text{acc}\\\text{dat}\end{Bmatrix}$ avamāna māḍisidare?
　　　　　Rao　　self's　　servant (instr)　you　　　　　　　insult cause-do-Q

　　　　　Did Rao make his servant insult you?

We conclude that data from case marking with causatives are inconsistent with an analysis in which the UCDO has undergone passivization.

It may be worthwhile to note that Kannada has two rules of passivization: a rule of personal passive, examples of which were given above, in which the underlying direct object becomes a subject and the underlying subject becomes an instrumental, and a rule of impersonal passive, in which the underlying subject is deleted and the underlying direct object remains a direct object. It might be thought that the instrumental case of the UCS in causatives like (8) could be accounted for by positing the application of impersonal passive on the complent cycle, and CU on the matrix cycle.

Such an analysis cannot, however, survive close scrutiny. Kannada impersonal passives differ from impersonal passives in other languages in that the agent may not be expressed. Compare Kannada example (26) with an instance of impersonal passive in German (27).

(26) a. Active:
        Krishnanu   rāmanannu   kondanu.
        Krishna (nom) Rama (acc)   killed
        'Krishna killed Rama.'
     b. Impersonal Passive:
        Ramanannu   (*Krishnaninda)   kollalāyitu.
        Rama (acc)   Krishna (instru)   kill-become-past
        'Rama was killed.'
(27) a. Active:
        Der Lehrer   half dem   Schüler.[11]
        the teacher (nom) helped the pupil (dat)
     b. Impersonal Passive:
        Es würde   dem   Schüler   (vom Lehrer)   geholfen.
        it was   the   pupil (dat) by teacher   helped
        'The pupil was helped by the teacher.'

In both (26) and (27) the underlying subject is no longer subject in the output of the rule, but the object (accusative in Kannada and dative in German) retains its underlying grammatical status. Kannada differs from German, however, in that no agent phrase may be expressed in Kannada. Thus, impersonal passive does not provide a plausible source for the agent phrase in Kannada causative.

Additional evidence that impersonal passive has not applied in the derivation of causative like (8) is provided by the fact that the restrictions on impersonal passives differ from those on instrumental causatives. As was noted earlier, causatives in which the subject appears in instrumental case normally have transitive complement clauses. There is, however, a class of superficially intransitive complement clauses, the subjects of which appear in instrumental case. These are clauses with verbs like hāḍu 'sing', tinnu 'eat', and hēlu 'tell'. All of these verbs have an implied object meaning roughly 'something', which does not appear in surface structure. Note that in the output of CU the USs of these verbs receive instrumental case.

(28) a. Rāyaru (balavanta māḍi) magaḷinda hāḍisidaru.
        Rao   forcibly   daughter (instr) sing-cause-pt.
        Rao made his daughter sing.

  b. Avaninda tinnisiyē biḍuttēne.
    he (instr) eat-cause-emph. will leave
    I will make him eat.
  c. Avaninda rāmanige hēḷisuttēne.
    he (instr) Rama to tell-cause-fut.
    I will make him tell Rama.

These verbs, however, cannot undergo impersonal passive, which is restricted to clauses in which an object is overtly present. This is shown by examples (29)-(31).

(29) a. Active:
    Magalu   (hāḍannu)   hāḍidalu.
    daughter (nom) (song -acc) sang
    'The daughter sang (a song).
  b. Impersonal Passive:
    *Hāḍalāyitu.
    sing-become-past
(30) a. Active:
    Avanu   tindanu.
    he (nom) ate
    'He ate.'
  b. Impersonal Passive:
    *Tinnalāyitu.
    eat-become-past
(31) a. Active:
    Avanu   hēḷidanu.
    he (nom) said
    'He told, said.'
  b. Impersonal Passive:
    *Hēḷalāyitu
    say-become-past

Thus, impersonal passive could not apply in the derivation of the sentences of (28).

We would like to close by reviewing our arguments briefly. According to IOH, the CS of a transitive verb is always specified as IO in the output of CU. Apparent counter-examples are to be explained by the application of rules other than CU. Cases in which the UCS of a transitive verb appears as a DO on the surface are claimed to involve DM subsequent to CU. Cases in which such noun phrases appear as instrumentals are claimed by IOH to be due to the application of passive (or impersonal passive) on the complement cycle.

We have presented evidence that Hebrew and Kannada falsify IOH. A derivation making crucial use of DM is implausible for Hebrew because there is no independent motivation for DM in Hebrew. It is doubtful as well that causatives in which the CS is marked instrumental involve passivization in Kannada. First, verbs that do not undergo passivization freely take instrumental causatives. Second, the passivization hypothesis predicts the wrong case marking possibilities for verbs the objects of which may be either dative or accusative. We have also shown that impersonal passivization does not provide a plausible source for the instrumental case of the UCS in Kannada causatives.

Principles governing CU itself, and not interaction with other rules,

appears to be responsible for the derived grammatical relations of the CS in Hebrew and Kannada. We conclude that IOH, despite the elegance and simplicity of the hypothesis, must be rejected, and that greater variation among languages in the output of CU must be allowed and accounted for.

NOTES

[1]The version of IOH proposed by Perlmutter and Postal in 1974 may differ considerably from IOH as it is presented here. This paper should not be read as a discussion of the work of Postal and Perlmutter per se, but rather of a particular hypothesis.

[2]Tree structures are used here for reasons of familarity only. The rule of CU would be expressed in terms of grammatical dependences rather than dominance and precedence. Broken lines indicate optionality.

[3]We would like to thank Mario Saltarelli for the examples from Italian.

[4]See Cole (1976) for details.

[5]We would like to thank Gloria Sheintuch for the examples from Persian.

[6]We shall dicuss the ungrammaticality of (11) below.

[7]Persian would seem to be one such language. See Sheintuch (ms).

[8]It might be thought that (12c) would be grammatical if the UDO were to receive oblique or dative case. However, this is not correct. Regardless of the case marking of hasefer in (12c), this sentence is ungrammatical as a paraphrase of (12a).

[9]It might be proposed that the lack of independent evidence for DM in Hebrew does not constitute a valid argument against a DM derivation for (5). It could be argued that if a rule such as DM exists in other languages, and if, by hypothesizing the existence of the rule in Hebrew, it is possible to avoid complicating the analysis of CU universally, DM should be hypothesized despite the lack of language specific evidence for the rule in Hebrew.

It seems to us that this position is not in keeping with sound linguistic methodology. To argue for the existence of a rule in one language merely because such a rule can be found in other languages, and because its absence would lead to complications in the formulation of another rule, strikes us as denuding linguistics of its empirical basis.

[10]This does not apply to causatives of so-called "ingestive" verbs such as 'eat', 'drink', and 'bathe', in which the UCS appears with dative marker. For further discussion of this aspect of the Kannada causative, see Sridhar (1976).

[11]The examples in (27) are taken from Comrie (1976b).

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NOTES TOWARD AN UNDERSTANDING OF RULE GOVERNMENT

G. M. Green
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Our intent in this paper is first to point out some significant questions concerning rule government as a topic in universal grammar, then to address the problem of specifying more precisely what we mean by "rule government".

Part of the appeal of relational grammar lies in its potential for directly capturing what seem to be important cross-linguistic resemblances that are otherwise obscured. It remains to be seen, of course, whether these resemblances are real and important, or only artifacts of the theory. One test is the discovery of non-trivial universal "laws" concerning the role of grammatical relations in the organization of grammars; Postal and Perlmutter (and others), in unpublished work, have already made some progress toward such laws. But there are, it seems to us, other cross-linguistic generalizations to be made which have so far received little attention; in particular, the matter of rule government. We will attempt to explicate this notion in slightly greater detail later in this paper. For the moment we rely on the reader's acquaintance with G. Lakoff (1965), R. Lakoff (1968) and Green (1974). We should point out that interest in these matters is hardly an innovation of generative grammar; practically any good traditional grammar contains useful observations and generalizations on the sort of phenomenon we will scrutinize, though perhaps stated in terms of "constructions" rather than "rules"; for example, one finds in Smyth's Greek Grammar (Smyth 1956), written in 1918:

> Verbs signifying to hope, expect, promise, threaten, and swear take the future infinitive in indirect discourse... (p. 450)

> The infinitive is the subject of the passive of verbs of saying and thinking... (p. 450)

and many similar statements.

It is our intuition that attention to such matters provides another important point of comparison among languages, and that in fact factors of rule government, in addition to grammatical relations, have an important role in the linguist's intuition that certain rules are related or identical. For example, it is well known that the application of passive in English requires not only that the structural description be met, but also that the verb in the passivized clause be a member of a certain set (which may or may not form a natural semantic class); the difference between have and possess is frequently used to illustrate this point. Now suppose we find in, say, Hupa a rule whose relational effect is to promote a non-subject to subject within a clause; we will be tempted to call this rule "passive" on the basis of its relational similarities to the English (etc.) rule of the same name. But the question arises whether this similarity goes deeper than a taxonomy of rule types would suggest. If on further examination we should find that the "passive" rule in one language was governed by a particular class of verbs, but in the other not governed at all, or if both were governed but there was no regular relation between the governing classes in the two languages, we would probably conclude that

the two rules were merely similar in grammatical effect, hence both subject to any universal laws that pertained to such rules. On the other hand, if we should find some regular correspondence between the two governing classes (say in terms of semantic or pragmatic properties); for example if the two classes were (nearly) identical, or one a (non-trivial) subset of the other, or even one the complement of the other; then we would be led to wonder whether the similarity between the two rules was more than merely typological, some closer sort of relation up to identity perhaps. This notion of "same rule" in two or more languages, though it has occasionally been advanced, is of course not at all clear. The clearest version of it is the suggestion of Bach (1965 and elsewhere) that there is a universal inventory of syntactic rules from which all languages draw, which seems to imply a treatment of "same rule" in terms of an innateness hypothesis. The only other coherent possibility that occurs to us is that universal properties (linguistic or extra-linguistic) can give rise independently to the development of very similar rules. A candidate for such a case is the rule of neg-transportation. Given proposals like Horn (1975) and Halpern (1976) and the observation that language learners may on occasion mistake implicature for conventional meaning (see Cole (1975), Morgan (forthcoming) for discussion), then it is conceivable that the rule of neg-transportation could arise independently in different language communities, with the same, or strikingly similar, governing classes. That is, given that two language communities have similar rules of conversation, so that in each the direct literal translation of the sentence "I don't think John is here" conversationally implicates "I think John isn't here", then it is equally possible in each for language learners to "mistake" this conversational implicature for conventional meaning, thereby grammaticalizing the implicature as a transformation or rule of interpretation. This sort of analysis of "same rule", of course, in effect denies that the two rules are the same rule, except in the sense that the wing of a bird and the wing of a bat are "the same" appendage.

No doubt there are other possible ways to deal with the notion "same rule" besides universal inventory and independent origin. But none has been advanced, to the best of our knowledge, save the historical characterization of "same rule" as a common inheritance from a parent language.

But the problem of capturing the notion "same rule" is certainly not the only important question concerning rule government. In fact cross-linguistic generalizations may lead to significant constraints on grammatical theory. It may be possible to find constraints both on the form of governed rules and on the make-up of governing classes. We have in mind for the former the examination of possible hypotheses like:

(a) all rules that change grammatical relations are governed
(b) all cyclic rules are governed
(c) no non-cyclic rules are governed
(d) no rule containing an essential variable is governed
(e) if a rule that changes grammatical relations is governed, the governing element is the predicate to which the affected term bears its derived relation.
(f) if a cyclic rule is governed, the governing element is contained in the highest clause of the cycle.

and so on.

In regard to governing classes, one might consider hypotheses like these:

    (g) governing classes are always natural semantic classes (perhaps with a small residue explainable on historical grounds)

    (h) there are universal correlations between form or effect of a rule and the class of elements that govern the rule

    (i) there is some universal and relatively small set of semantic classes that function as governing classes in natural language

No doubt some of these are easily falsifiable; we intend these lists as illustrations of possible constraints, not as empirically based generalizations, though we suspect that (a), (d), (e), and (g), and perhaps (i), are correct.

But before any serious work can be done along these lines, it is necessary to have a more precise characterization of the notion of "rule government". The remainder of this paper is an attempt at a beginning.

We can begin by defining two basic kinds of limitations on a rule's application: government and exceptions, and considering possible ways in which they might be related. Let us use the term government in a more or less traditional way to refer to the determination by some term (generally a verb or predicate noun or adjective) of the applicability of a rule affecting the form of a construction it commands. (Compare the traditional usage of this term by Sweet (1892) and Fowler (1868)):

> When a word assumes a certain grammatical form through being associated with another word, the modified word is said to be governed by the other one, and the governing word is said to govern the grammatical form in question. Thus . . . in I see him, him is governed by see, and see is said to govern the objective case him. In I thought of him, the form-word of also governs the objective case.
>
> (Sweet 1892:

> Government is that power which one word has over another in directing its Mode, Tense, or Case.
>
> (Fowler 1868:511)

Naturally, traditional grammarians did not use the term "commands", and government for them usually referred to the determination of morphological form rather than syntactic construction, but the spirit of their usage and the one we are proposing are essentially the same.

In defining govern this way we are restricting it to characterization of the triggering element for a rule, in the sense of G. Lakoff (1973). That is, we use governing item, or trigger to refer to an element, probably always a predicative one, whose presence is necessary in a specifiable relation ('command' may well be part of it) to the controller and the affected element or victim for the rule to apply. Triggers are thus distinguished from controllers, which we take to be elements or constituents to which some other specified element or constituents must be identical or coreferential in order for the rule to apply.

This restricted use of govern reflects the sense of the traditional usage and will be more useful than a usage which includes all limitations on the applicability of a rule. For instance, it is certainly true that in a number of cases of rules affecting complement clauses, there appear to be limitations on the complement verb, the one that is 'victimized'

by the rule (e.g. has one of its terms or arguments deleted or otherwise
removed or altered) as well as on the trigger verb in the 'matrix' clause.
For example, A-Raising (subject raising to superordinate subject) is
governed by (among others) a class of epistemic verbs, including seem,
be likely, and appear. But seem and appear can only trigger raising of
the complement subject if the complement verb is stative, so that a
sentence like (1) if interpretable at all, has only a generic and thus
stative reading while (2) has an active reading as the preferred one.

    1.   John seems to hit Mary.

    2.   John is likely to hit Mary.

However, it isn't evident that this difference needs to be stated as a
condition of any sort on A-Raising. Since the 'disallowed' readings are
equally 'disallowed' if raising does not apply, the condition may be
essentially an underlying structure constraint, or simply a semantic one;
sentences like (3) have only a generic reading (again, only if you push
it), and ones like (4a) do not have an active reading at all, only the
same stative one that (1) and (3) and in fact (2), have, although for (2)
it is definitely not a preferred reading.

    3.   It seems that John hits Mary.

    4a. It is likely that John hits Mary.

We conclude that while the underlying structure of (1) is perhaps the
same as that of (3), the underlying structure of (2) is nothing like that
of (4a), but rather is similar or identical to that of (4b), which is in
fact ambiguous between a generic and an active sense, as is (2).

    4b. It is likely that John will hit Mary.

    Even if these apparent conditions on rules are not the result of
semantic or underlying structure constraints, it is worth observing that
the kinds of classes that must be mentioned in stating them differ from
the kinds of classes relevant in triggering. Trigger classes are typically
defined in terms like 'verbs of thinking', 'verbs of communication',
'verbs of perception, and even 'verbs of ingesting', while conditions on
victimized verbs refer typically to such categories as 'stative', 'voluntary',
'controllable'. If certain properties can be shown to be characteristic
of the class of triggered rules, but not of the class of triggered rules
and rules with conditions on the victimized clause, then the distinction
is a real one.[2]

    Without doing any violence to the use of the term exception, we can
use it to refer to a lexical item which fails to govern some morphological
or syntactic form (i.e. fails to allow the application of the rule which
provides for its occurrence). Let us further define a lexical exception
as one which will have to be listed in the description of the principle
to which it is an exception. (Equivalently, the rule to which it is an
exception will have to be mentioned specifically in the lexical entry for
the exceptional word.)

    Now, how may these notions be related? One rather extreme position
(Hypothesis I) is that they are two sides of the same coin -- that if
a rule has exceptions it is therefore a governed rule, that if a rule is
governed, the items to which it doesn't apply are therefore exceptions.
Under this hypothesis, which with certain elaborations was that of G.
Lakoff (1965), there is no distinction between lexical exceptions and any
other kind of items which for some general and motivated reason failed
to trigger a rule; all irregularities, all cases of interference in the
automatic application of rules, are treated as lexical exceptions, and
for Lakoff, exceptionality was indicated in lexical entries. Given this

strict and necessary relation between government and exceptionality, rule
government depends entirely on language-particular lexical items, so it
is hard to see how one could expect there to be predictable regularities
across languages or through time. Such a system has a certain methodo-
logical drawback as well, discussed in Green (1974), in that in making
it so easy to "handle" exceptions, it inhibits the search for explanations
of apparently exceptional behavior, and in doing so, may prevent the
investigator from providing a descriptively adequate analysis.

A more traditional view (Hypothesis II) is that government is not by
specific lexical items, but by semantic classes of lexical items (or by
grammatical categories in the case of morphological forms). In this view,
the property of having exceptions is not taken as defining the notion of
governed rule; a governed rule is one which applies to a semantically
specifiable class of lexical items. A governed rule may have exceptions
as well -- items in the specified class which fail to undergo the rule --
but ungoverned rules, that is, rules which do not make reference to
semantic classes, may also have at least apparent exceptions -- items
which result in unacceptable sentences when the rule applies. Thus
Infinitive Verb-Phrase Deletion, a rule that deletes an infinitive phrase
under identity to another, as in (5), is apparently an ungoverned rule, by
this definition of government. But it does not apply to a verb phrase which
is the complement of attempt, as in (6).

5. John could open the door if he wanted/tried/was ordered, but
he won't try.
6. *John could open the door if he desired/would bother, but he
won't attempt.

Unless this behavior of attempt follows from something (it probably does,
as we shall see), this ungoverned rule has a true lexical exception.

Examples of this sense of government from the earlier quotation from
Smyth (1956) and from Gildersleeve and Lodge (1892) and Curme (1931) may
be taken as representative of traditional grammarians.

> Verbs of Will and Desire take ut as well as the infinitive.
> (Gildersleeve and Lodge: 277)

> Verbs of Emotion, such as Rejoicing, Sorrowing, etc., take
> quod with the Indic. or Subjunctive.
> (Gildersleeve and Lodge: 329)

> [The accusative clause] is introduced by . . . but, but that,
> or in colloquial speech but what, often used instead of that not
> after a negative or interrogative proposition containing a verb
> of knowing, thinking, believing, expecting, fearing, or saying;
> an illogical but, but that, or in colloquial speech but what,
> sometimes used instead of the more common that after a negative
> or interrogative proposition containing a verb of doubting,
> wondering, earlier in the period also a verb of denying and
> gainsaying, in all four cases verbs which though positive in
> form are negative in meaning; an illogical but or but that
> instead of that after a negative or interrogative proposition
> containing a verb of hindering or preventing, verbs which though
> positive in form are negative in meaning, a construction once
> common but now replaced by a positive gerundial clause after
> the preposition from; in older English, an illogical that not
> instead of that after such verbs as to forbid, hinder, etc.,

> which though positive in form are negative in meaning; after
> verbs of remembering, recalling, thinking, learning, perceiving,
> hearing, and relating often how instead of that, or, especially
> earlier in the period, with double expression, how that, in
> popular speech often replaced by as how or that how;
>
> (Curme: 241-42)

Under this assumption, take in English would be an exception to the rule
of grammar which says that the past tense of a verb is formed by adding
/d/ to the present stem. But past tense formation would not be considered
a governed rule, because neither the class of regular items nor the class
of exceptions is definable in nonarbitrary terms. It would just be a
rule which had exceptions.

Under this hypothesis (and the more extreme one described below)
not all exceptions have to be lexical exceptions. A given lexical item
might be an exception to a particular rule (that is, the rule might not
apply as expected) because the lexical item might never be allowed to
occur in the structure defined by the output of the rule, regardless of
which rule happened to determine that structure in a given instance.
(An example of this is given in (34-42) below.) In such a case, the
lexical entry for the item must mention the forbidden structure, but it
needn't mention the rules which define it, nor do they need to mention
the lexical item as an exception, so this item would not be a lexical
exception.

Furthermore, in such a system, at least as described in Green (1974),
lexical exceptions are empirically as well as descriptively distinct from
non-governing lexical items: lexical exceptions are true irregularities
in the language and show up as such in being regularized in the speech
of children and foreigners learning the language. Thus such individuals
may mistakenly form a regular past tense for see or take, lexical
exceptions to the past-tense formation rule, but they don't use cost and
resemble in the passive.

Cross-linguistic and diachronic comparisons and predictions can be
made in this system (cf. R. Lakoff (1968) and Green (1974)), and putative
universals can be readily stated, as the primitives of government in this
system are the semantic notions that define the semantic classes that
govern rules, and because they are based on meaning, they are presumably
items in a non-trivially universal inventory. But this system offers
no reason to expect rules of similar grammatical function in unrelated
and widely separated languages to be governed by the same or similar
semantic classes. Yet this may well be the case; it is our impression
that it is. Horn (1975) offers documentation of this for one governed
rule, and perusal of a large number of traditional grammars of disparate
languages suggests the same situation for other rules.

A third position, as extremem as the first, predicts that situations
like this will frequently occur when languages have rules which effect
similar syntactic changes. This position (Hypothesis III) is that the
governing classes of governed rules are pragmatically determined. The
class of lexical items governing a rule will be just those that have
logical or semantic characteristics which have an appropriate relation to
the pragmatic load borne by the rule they govern, or by the structure they
determine.

For example, consider the distribution of the expression the hell after interrogative words. It is in fact impossible to describe a lexical class which governs the distribution of WH-the hell expressions (or the rule of the hell insertion, if you prefer), in terms of lexical items or semantic classes of them. One of the principles that determines the appropriateness of the hell with interrogatives is the condition that the speaker be ignorant of the answer to the question that corresponds to the WH-the hell clause. Thus the appropriateness of the sentences in (7-13) is not a function of lexical items which allow WH-the hell expressions; negation, adverbs, modals, choice of subject, and a host of other structures which can combine to reflect the speaker's ignorance interact with the meaning of these lexical items to determine the appropriateness of the hell in a particular case.

7a. *They told me who the hell did it, but I won't tell you.
7b. They told me who the hell did it, but I can't remember
     who it was. /damned if I can remember who they said.
8a. ??Ask me who the hell it is.
8b. Don't ask me who the hell it is.
9a. How the hell it got there is a mystery.
9b. *How the hell it got there is no mystery.
10a. ??She knows who the hell it is.
10b. Maybe she knows who the hell it is -- I sure don't.
11. No one knows where the hell it is.
12a. ??Someone knows where the hell the barrette is.
12b. Someone must know where the hell the barrette is.
13a. Only he knows where the hell it is.
13b. ??Only I know where the hell it is.

Finally, the factors determining the grammaticality of infinitive complements as described in Riddle (1975) may be interpreted as a third illustration of pragmatically-based rule triggering.

If rule government is pragmatically determined, both governed and ungoverned rules might have exceptions, insofar as the application of a rule of either type might produce unacceptable results with certain lexical items. However, just as under Hypothesis II, we must expect there to be synchronic or historical reasons for apparent exceptionality.

Since governing classes are all pragmatically determined in this approach, if we accept it, we will expect that if two languages have governed rules which describe the same grammatical relation between structures (e.g. each has a "passive" or a rule of "tough-movement") then we will find that the governing items have essentially the same meanings given that the two languages have roughly the same pragmatic rules. And we will be at a loss for an explanation if we find that the meanings of the items in one language are totally distinct from the meanings of the governing items in the other. Likewise, we would not predict any wholesale changes over time, barring changes in the pragmatic system as a whole. Sporadic and idiosyncratic changes in the meaning of particular lexical items, could, of course, cause items (or rather, their historical descendants) to leave or enter the governing class, but insofar as the criteria for membership in the governing class remained the same, this would be of little interest.

Let us now examine how exception and government have been used in the generative grammar literature of the past fifteen years, and what alternatives to Hypothesis I have been proposed. In the first attempt to

confront the issue directly, G. Lakoff (1965) used the term government in the broadest possible way, including in its scope all cases where the application of a rule was affected by what lexical item filled some slot in the structural description of the rule. Although he admitted (p. 29) that he was unable to define what he meant by government, his use of the term, in addition to remarks such as the following make it clear that his position is essentially the first one described above.

> The notion of possible exception and the notion of what must
> be marked when a rule operates seem to come together in the
> partly intuitive notion of government (28)[3]

Thus, for him, Passive was governed because it didn't apply to such main verbs as have (in the sense of 'possess')[4] and get (in the sense 'receive'), as in (14-16), and had to apply to a few verbs like rumor. And so was Negative Raising (his Not-transportation), since it could apply only to verbs like think and want, and not to realize or hate.

14a.   John has my copy of Aspects.
14b.   *My copy of Aspects is had by John.
15a.   Everyone got an A.
15b.   *Eleven A's were got(ten).
15c.   Eleven A's were given.
16a.   *They rumor that John is a kleptomaniac.
16b.   It is rumored that John is a kleptomaniac.
16c.   John is rumored to be a kleptomaniac.
17a.   John realizes Bill won't leave.
17b.   John doesn't realize Bill will leave.

But Lakoff considered all rules with lexical exceptions to be governed rules. So for him, WH-Deletion (actually WH-be Deletion) was just as much a governed rule as Passive since it had to apply when a relative clause contained an item like gala as its predicate adjective. Likewise Adjective Preposing was considered to be governed since paradigms like (18) and (19) were taken as indicating that it, as well as Wh-be Deletion had to apply to items like former, and late in the sense 'deceased'.

18a.   *They wanted to have a reception which was gala.
18b.   ?They wanted it to be something gala.
18c.   They wanted to have a gala reception.
19a.   *The president who was former was widely respected.
19b.   *All presidents former by resignation forfeit their pensions.
19c.   Former presidents are welcome to attend.

R. Lakoff (1968) refined this system of treating exceptions to include the notion of redundancy rule so that rule government could be treated as a regularity in the language rather than an irregularity, and predicted with some accuracy on the basis of the semantic-class membership of the lexical items whose grammatical category was mentioned in the rule in question. But G. Lakoff's notions of rule government, markedness, and rule feature were adopted intact, essentially without comment. In spirit her approach was much closer to Hypothesis II, but her system seemed to require one to treat all rules with exceptions as being governed rules just as much as Passive or Equi or Negative Raising.

It is, of course, not in fact necessary to describe all cases where a rule appears to have lexical exceptions as instances of rule government. One alternative, which Perlmutter argued for as early as 1968, is that the

underlying structure configurations in which a lexical item can occur may
be restricted; Perlmutter argued that indeed a deep structure constraint
(DSC) was more adequate to describe the distribution of items like try
and scream that G. Lakoff described in terms of rule feature and structural
description feature exceptionality markings (markings that indicated that
the rule had to or could not apply, or that the structural description
had to or could not be met by a clause containing a certain lexical item).
As it happens, the rule in this particular case that Perlmutter treated
(Equi-NP-Deletion) is one which most grammarians who admit such a rule
would consider to be governed. This doesn't have to be the case, however.
Consider another of Lakoff's cases. In attempting to define what he
meant by government, he claimed (p. 28) that beware is "an exception to
the question transformation" since sentences like (20) are ungrammatical.

    20. *Did you beware of John?

(Presumably he meant by this that it was an exception to the inversion
rule which is triggered by some question morpheme (or morphemes) -- either
"Q" or some (possibly performative) verb or structure indicating an act
of questioning. The fact that this rule could be governed by (i.e. require
in its structural description an item (Q or ASK or ASK-TELL etc.) in one
clause, and have an exception which occurred in the complement of that
clause suggests that Lakoff's attempt (1965:28) to identify government
with the possibility of having exceptions was simply misguided. In
effect, he had two entirely separate and more or less arbitrary items
determining application of the same rule to the same clause at the same
time.)

    If the inversion rule in question is governed at all, it is governed
(II or III) or triggered by whatever functions as the syntactic indicator
that the affected clause is a request for information. But it is most
likely that the governing factor is a pragmatic one, a function of the
speaker's intention, and in a particular case might not have a syntactic
or lexical indicator other than the inversion, as in (21).[5] Sentence
(21a) may or may not be intended to elicit an informative response, but
(21b) definitely must be.

    21a. I wonder what he wanted.
    21b. I wonder what did he want.

To the extent that this inversion is determined directly by pragmatic
factors rather than lexical ones, it is not governed in our present sense.

    In any case, given that (20) is ungrammatical, to describe this fact
by saying that beware is an exception to Q-Inversion is surely to miss
the point, for beware is much more restricted than just that, and the
restrictions can be described in a general way, rather than being attributed
to beware's being an exception to a whole host of syntactic (and morpho-
logical!) rules. In fact, beware cannot occur in many simple affirmative
declarative sentences either, even where there is no transformation,
including even Affix Shift, to which its absence could be attributed. Thus
the sentences in (22) are as bad as (20).

    22a. *I wonder if you bewore of John.
    22b. *I bewore of John.
    22c. *I always beware of John.
    22d. *I am bewaring of John.
    22e. *I can beware of John.
    22f. *I must beware of John.

The restriction on beware was thought for some time to be essentially an underlying structure constraint: beware could only appear in the complement of verbs of warning or the like, including abstract, performative verbs. This predicted correctly that the sentences in (23) were acceptable.

23a. Beware of the dog.

23b. I warned/told him to beware of the dog.

23c. I suggested that he beware of the dog.

However, the following sentences are equally acceptable, yet cannot all plausibly be considered to arise from underlying structures with verbs of warning embedding beware.

24. You must beware of the dog.

25. I expect you to beware of the dog now, and not come home with your pants in shreds.

26. If you beware of the dog, you'll be able to get to the door in one piece.

It could be maintained that (24) has an underlying structure roughly equivalent to (27),

27. I warn you that you must beware of the dog.

but then sentences like (22f) ought to be as good as ones like (24), because there wouldn't be anything to prevent them from having underlying structures like (28).

28. I WARN YOU THAT I MUST BEWARE OF JOHN.

Similarly, all of (25) or (26) could be considered the complement of a performative I WARN YOU clause, but notice that the beware clause is not itself the complement of WARN; in this analysis, nothing would explain the fact that (25) is grammatical but (29) is not.

29. *(I warn you that) I consider you to beware of the dog.

In (26), beware would be even further removed syntactically from an abstract performative WARN; it would be in an adverbial clause which modifies the complement of WARN. The obvious alternative, patently absurd to the generative semanticist who would propose such a DSC analysis, is to say that the underlying structure of (26) is (30).[6]

30. IF I WARN YOU TO BEWARE OF THE DOG, YOU WILL GET TO THE DOOR IN ONE PIECE.

We conclude that the constraint on beware is not a structural one, but essentially a pragmatic constraint (or a semantic constraint, provided the semantics are not equated with the syntactic representations, for in this case, that seems to result in hopelessly ad hoc descriptions), and we conjecture that insofar as the phenomena described as DSCs generally reflect pragmatic properties speakers associate with lexical items, it may turn out to always be the case that USCs are better described in terms of semantics or pragmatics. If we can say that beware may occur in any structure consistent with its defective morphology (it has only an infinitive/imperative form) which is being used to convey or report[7] a warning against the object of beware, then not only do we avoid the claim that the "question rule" is governed, because it has beware as a lexical exception, which has to be listed, but we also avoid the gymnastics necessary for analyzing beware as subject to a DSC. Furthermore, it will follow that (26) is less bizarre than (31) or (32).

31. If you beware of the dog, I'll give you some candy.

32. If you beware of the dog, I'll give you a punch in the nose.

Notice that while a structure like (32) except for the lexical item beware could, preserving sense and grammaticality, be embedded as the complement

of I warn you, as in (33), neither (32) nor (33) is understandable
as a warning to beware of the dog.
    33.   I warn you that if you avoid the dog, I'll give you a
             punch in the nose.
Both are, rather, threats (somewhat ungrammatical in the case of (32)),
implying that the addressee should not 'beware of' the dog.

    Another alternative, available in principle at least as early as
deep structure constraints, although not to our knowledge suggested as
a substitute for rule government until 1971, is the notion of surface
structure constraint (SSC). Thus instead of saying that a certain rule
had to apply or could not apply to a certain lexical item (i.e. that
the item was a lexical exception) one might say that the lexical item
had to or could not appear in surface structure in the structural
configuration corresponding to the structural change of the rule. If
this configuration could arise in a variety of ways, and was ill-formed
regardless of origin, then a SSC analysis would be preferable, since it
eliminates the necessity of making the item an exception to every rule
that takes that configuration as input or gives it as output.

    An apparent case of a surface structure constraint may be found in
Postal (1974), though on examination it turns out to be a global constraint
referring to surface structure. (In fact we have found no unambiguous
cases of surface constraints which could plausibly be misanalyzed as
government, though their existence seems a distinct possibility, and their
absence an accidental gap in our knowledge). Postal describes a number
of verbs (e.g. allege, guess, guarantee, reveal)[8] which had been thought
not to govern B-raising (subject-to-object raising) at all, as in fact
governing the rule, but subject to a Derived Object Constraint (DOC) that
forbids them from being followed by derived NP objects[9] in surface
structure. Thus sentences like (34) are ungrammatical:
    34a. *I guess John to weigh about 220 pounds.
    34b. *They guarantee the refrigerator to work for 20 years.
    34c. *They revealed John to have committed the larceny.
But when the direct object is removed syntactically from postverbal position,
whether by WH-movement or deletion, Topicalization, Passive, or Heavy
NP Shift, such sentences are acceptable. Thus all of the sentences in
(35) to (39) are grammatical.
    35a. Who did they reveal to have committed the larceny?
    35b. What do they guarantee to work for more than 90 days?
    36a. John, whom they revealed to have been in prison at the
          time, was not called to testify.
    36b. The one I guessed to weigh 220 pounds only weighed 190.
    37a. Your cousin I would guess to weigh over 190.
    37b. The motor they guarantee to be free of defects in
          workmanship only.
    38a. John was revealed to have been in California at the time.
    38b. The motor was guaranteed to work for 20 years.
    39a. They revealed to have been present during the transaction
          three known informers for the CIA.
    39b. They guaranteed to work for twenty years all parts not made
          by slave labor.
    This is actually a global derivational constraint since it only
prohibits derived object NPs in object position; underlying NP objects
may remain in object position, as evidenced by the grammaticality of the
sentences in (40):

40a. He revealed an error in the analysis.
40b. They guaranteed the motor for three years.
40c. They revealed/guaranteed that no one would be allowed to
enter the crypt.

The point remains that a constraint on surface structure, even a global one, may make it appear at first that a verb fails to trigger a certain rule. A similar case is the lexical item attempt, which in its contemporary use is synonymous or nearly so with similar uses of try. It may not occur without a complement unless a remnant of that complement (e.g. it, infinitival to) remains in the sentence.[10] Thus try and attempt may both have infinitival complements:

41a. John tried to touch his toes.
41b. John attempted to touch his toes.

and action nominalization complements:

42a. John tried a flight to Cuba.
42b. John attempted a flight to Cuba.

Both have elliptical uses which permit an ordinary referential noun phrase as surface complement:

43a. John tried the lock.
43b. John attempted the lock.

and in fact (42a, b) are both ambiguous between action nominalization and elliptical readings. They may describe an attempt by John to make a flight to Cuba, or to sell, stall, board, hijack, describe, etc. one. The complement of attempt may not be deleted without leaving evidence of its original presence, whether by Infinitive Verb-Phrase Deletion:

44a. You'll never know if you can write, unless you try.
44b. *You'll never know if you can write, unless you attempt.

by Unspecified-Object Deletion:

45a. One thing about John, he always tries.
45b. *One thing about John, he always attempts.

or by a discourse rule of Verb-Phrase Suppression:

46a. Can you do it? I can try.
46b. Can you do it? *I can attempt.

but if a pronoun or infinitive marker remains, deletion and suppression are permitted:

47a. We'll never know if we can write, if we don't try it.
47b. We'll never know if we can write, if we don't attempt it.
48a. Can you do it? I can try it.
48b. Can you do it? I can attempt it.
49a. Can you do it? I can try to.
49b. Can you do it? I can attempt to.

The restrictions illustrated in (44-49) on the use of attempt involve the application of at least two rules. If we were to claim that these restrictions were not the result of a single limitation on the syntactic environments in which the lexical item attempt may occur at a given level or levels, and claim instead that attempt is an exception to both or all of these rules, we would have to say that both or all of the rules are governed in G. Lakoff's sense, requiring description in terms of rule features, one for each rule to which attempt is an exception.[11] Furthermore, if the surface structure distribution of attempt is determined by these two or three rules, rather than by a single restriction on possible surface structure environments, then we would predict that there would be speakers of English for whom one rule was blocked for attempt, but not the other. This is an empirical question; it predicts, for instance,

that there could be a speaker of English for whom (47b) would be grammatical, but (48b) would not, which we find unlikely. Moreover, if attempt is a lexical exception to several rules we would predict that children would often make mistakes in the use of attempt, and have to be corrected by adults, since they would have no easy way of knowing which rules it was an exception to.

If, on the other hand, we consider the non-occurrence of attempt in certain surface-structure positions to be determined by a single specific condition on the syntactic environments in which it may occur, rather than by its being an exception to a number of syntactic rules, then we predict that speakers of English can indeed differ in their use of attempt, but that the occurrence or non-occurrence of certain constructions (such as (44b)) will imply the occurrence or non-occurrence of other constructions (such as (45b)).[12] Furthermore, it is more plausible to assume that, in learning the syntax of a verb which is relatively restricted, a child extrapolates from adult speech to formulate a hypothesis about the correct surface structure environment for the item, than it is to assume that he tries to assign rule features or to learn lists of exceptions.

A somewhat similar approach, again placing the blame, as it were, for the exceptionality on the shoulders of the lexical item, and not on particular transformations, was taken in Green (1974), to describe the use of anticipate in certain dialects with respect to Negative Raising. It is suggested there that one might say about these dialects:

50. The lexical item anticipate may encode the derived semantic configuration ["EXPECT"] (or whatever) unless the latter is preceded in the same clause by a negative which originated in a lower clause.

(1974:53)

This analysis was necessary in order to maintain the claim that governed rules were governed by semantic classes, in fact were defined as those rules whose structural descriptions mentioned semantic classes. It was necessary to make essentially this claim in order to allow Negative Raising (NR) to be strictly semantically governed by verbs of opinion, and yet accomodate the fact that the meaning of anticipate puts it in the governing class, although it apparently does not govern application of the rule in certain dialects of English. This calls for some commentary. First, it is assumed here not only that those speakers who claim that anticipate does not allow NR in their speech are indeed correct, but also that anticipate can indeed mean 'expect' for them, for if it meant only 'take pleasure in contemplating or 'deal with prematurely', one would not expect it to allow NR. Without either one of these assumptions (50) would not be necessary.

Second, the observant reader will have noticed that the global condition (50) on the insertion of anticipate repeats the structural change of NR. Obviously, he may object, this is a trick, a sleight of hand. If so, it is good that it is so transparent. Otherwise we might be misled into thinking that we have explained something. Indeed, in Green (1974) it was pointed out that treating exceptions this way is too easy, and it was emphasized that this treatment must be supplemented by empirically-based constraints on its use.

Or, the reader may say, it is obvious that a generalization is being missed. We agree. But if <u>anticipate</u> is really an exception to NR for the speakers in question, and it really does mean 'expect', and if we are right about the role of meaning in rule government, then saying that the grammar of these speakers is missing a generalization expresses very precisely the essential nature of exceptions. Statements like (50) are repetitious, and if translated directly into psychological terms about information that must be stored, they are expensive. But real exceptions should be characterized as "expensive", if they require a corrective effort to be learned.

Thus, before we can begin to test any hypothesis about universals of rule government or its relevance to syntactic change, we have to pick a position on the continuum of positions discussed earlier concerning the relation between government and exceptions. And if we choose any position but the extreme first one, as we would prefer to do, we have to be able to separate the true lexical exceptions, which are exceptions to the rule in question only, or are only coincidentally exceptions to other rules, from "exceptions" which are predictable from semantic, pragmatic, or structural constraints on their use.

This does not promise to be an easy task. Take the rule of Passive, for instance, a standard example in generative grammar of a governed rule. To begin with, we have not seen any attempt since Chomsky's attempt in <u>Aspects</u> to define, in semantic or any other terms, the class of verbs that have passives. Considering the fact that there are several pragmatic motivations for using the passive voice (cf. Sinha 1974, and articles cited there), this is not surprising, although Hypotheses II and III predict that if Passive is governed, the set of governing verbs will constitute if not a coherent semantic class, at least a union of such classes.

Neither do all of the exceptions to Passive fall into a coherent semantic class, although there are semantically specifiable classes of exceptions, as a (mixed) theory like Robin Lakoff's predicts may be the case. Thus verbs of measuring, such as <u>cost</u>, <u>weigh</u>, <u>extend</u>, <u>measure</u>, <u>hold</u>, etc., are not passivizable.

51a. This book costs ten dollars.
51b. *Ten dollars is/are cost by this book.
52a. The illustration extended 3/4" into the margin.
52b. *Three quarters of an inch into the margin was extended by the illustration.
52c. *Three quarters of an inch was extended into the margin by the illustration.
53a. The toy chest measures 15" deep.
53b. *Fifteen inches deep is/are measured by the toy chest.
54a. This cup holds eight ounces.
54b. *Eight ounces is/are held by this cup.

It has been suggested by Richard Rhodes that there is a pragmatic explanation for this fact, namely that passivizing measure-sentences like these contradicts the general principle that motivates speakers to put old information at the beginning of the sentence, and new information at the end, since the measure-phrase is always going to be new information. In addition, the measure-phrases are not referential; specific, definite, referential NPs tend to be preferred as subjects over non-generic, non-referential NPs, and even over non-specific referential NPs (cf. Ransom 1975, Keenan 1975).

Other apparent exceptions (and perhaps these as well) may be simply reflections of the fact that the verbs in question are not underlyingly or pragmatically transitive (i.e. don't have real direct objects), and thus are not subject to the rule of Passive, or are subject to global constraints on Passive that refer to logical structure or intended meaning. Such cases as resemble, and the idioms for 'die' (kick the bucket, buy a farm, meet one's maker, etc.) have been offered as examples (see Newmeyer (1972) for discussion).

In some accounts of Passive, be might have to be a lexical exception when it occurs with a predicate nominative as in (55).

55a. John is my brother/a doctor.
55b. **My brother/a doctor is been by John.

But alternatives are available. If be belongs to a different grammatical category from "real" verbs, or if these constructions are analyzed as having the predicate nominatives as their underlying (intransitive) predicates, with be being inserted, or with predicate NP's as non-objects, it will not have to be considered an exception. However, get does seem to be a lexical exception to Passive in that its synonym receive may under at least some circumstances passivize while it never does when it means 'receive'.

56a. Ten students received A's.
56b. A's were received by ten students.
57a. Ten students got A's
57b. *A's were got(ten) by ten students.

On the other hand, there is not much (if anything) in the way of supporting evidence for this claim: We know of no evidence that the non-passivizability of get is a source of error for learners of English, and if it is true that the non-cognate equivalents of get in other languages do not passivize either, this is a very suspicious coincidence.

As for rumor, which must passivize, it is important to note that at least until the end of the eighteenth century it could be used in the active voice in the sense 'circulate rumors', so that any description that depends on restrictions at the level of underlying structure, pragmatic or otherwise, seems unlikely, given the usual assumptions about the universality of underlying structures, especially semantic ones.

Extraposition is an unusual rule in that application seems to be the norm, non-application a sign of some stylistic or pragmatic markedness. In the early days of transformational grammar, it was said to be governed in that it was obligatory for certain predicates, such as seem, strike, transpire, and likely, but not e.g. for annoy or unlikely, or believable.

58a. *That Tom has become religious seems.
58b. It seems that Tom has become religious.
59a. *That Tom would be a good choice strikes me.
59b. It strikes me that Tom would be a good choice.
60a. *That Affix Shift is ungoverned is likely.
60b. It is likely that Affix Shift is ungoverned.
61a. That Tom has become religious annoys me.
61b. It annoys me that Tom has become religious.
62a. That Affix Shift is governed is unlikely.
62b. It is unlikely that Affix Shift is governed.

Yet many of these predicates also allow A-Raising (subject raising into subject position):

63. Tom seems to have become religious.
64. Tom strikes me as (being) a good choice.
65. Affix-Shift is likely to be ungoverned.

Since Extraposition is no longer considered to be involved in the
derivation of such sentences (as it was for Rosenbaum (1967)) one
can no longer say that Extraposition is strictly obligatory for these
verbs. One is tempted to say that such verbs are prohibited from
occurring in a clause-final verb phrase under some conditions, but
expressions like (66-69) show that these conditions cannot include just
surface structure, and it is difficult to imagine any level at which
the likely in (69) would not be clause-final.

66. So it seems.
67. John got married and has five children, strange as it may
    seem.
68. John is not as tall as he seems.
69. Mary thinks Bob signed the bill of lading with your name,
    which is very likely.

Postal's (1972) discussion of this problem does not clarify much.
Postal attempts to give what amounts to a global characterization of the
restrictions on seem, but argues that one cannot even claim that
Extraposition is obligatory for seem and the other verbs when they have
surface that-complements, because sentences like (70) are good, while
ones like (71) are not, although in neither one is the that-clause
complement of seem extraposed.

70. It is likely to seem that S_3.
71. *That S_3 is likely to seem.

Postal assumes here that Extraposition is post-cyclic, and that (71)
is derived by the application of A-Raising on the S_1 cycle on (72), and
that (70) results from Extraposition of the derived that-clause subject
of likely (i.e. S_3) in (71).

72. $[_{S_1}$ $[_{S_2}$ S_3 seems$]_{S_2}$ be likely $]_{S_1}$

Postal concludes that whatever the correct characterization turns out
to be, it is almost bound to be of a global nature.

However, if Extraposition is cyclic, as Neubauer and Jacobson
(1975) have argued, then an analysis is possible in which the suggested
global condition does hold, because (70) will be generated by Extra-
position on S_2, followed by Raising of the introduced it on S_1, whereas
(71) would involve the prohibited failure of Extraposition, and be
generated just by A-Raising on S_1 of the sentential subject (S_3) of the
subject complement of likely.

In any case, it is surely worth noting that synonyms for seem
and appear are prohibited from occurring in structures like (60a) in
a number of SVO languages (French, Spanish, German, Hebrew) which allow
sentential subjects for other intransitive predicates. This situation
would follow if there was some semantic or pragmatic connection between
the involved (or disallowed) surface structure and the meanings of seem
and the other verbs allowed. For instance, it may be that we have
been analyzing their logical structures incorrectly, and their meanings
might be such that from the (unknown) underlying structure in which
they occur, forms like (58a) would never arise. This seems to be the
position of Hochster (1974). The theory which she proposes in order to

make this description also allows, however, for arbitrary (i.e. not independently motivated) level constraints on the insertion in Shallow Structure of semantic classes of lexical items. Thus, she proposes in a different but comparable context that "no predicate containing the semantic feature [SENSE] will be inserted into a shallow structure representation whose VP immediately dominates a V, an NP, and some other constituent" (1974:6).

Or, more plausibly, it may be that there is some pragmatic function served by forms with unextraposed sentential subjects, which is inconsistent with the meanings of verbs like seem. In particular, such forms typically are used to assert something about the sentential subject, which is treated as presupposed (taken by the speaker to be assumed by the addressee to be true). It has often been observed that with verbs for which Extraposition is optional, this usage is much more typical of the unextraposed variant. In any case, this usage is inconsistent with the meanings of seem, appear, etc., namely that the truth of the proposition expressed by the logical subject is not certain, or perhaps not clear, but only an appearance, which might be misleading. Typically seem and appear are used, with Extraposition or A-Raising, not to comment on a proposition presupposed to be true, but to assert a proposition, and hedge the assertion at the same time, that is, to suggest that the proposition might be true. Thus, the meanings of seem and appear etc. are inconsistent with the pragmatic function associated with the unextraposed version, and these meanings are reflected in the typical use of these verbs with both Extraposition and A-Raising.

Our purpose has been to focus attention on the problem of finding general criteria for the notion "governed rule", and to point out some of the difficulties involved in choosing between rule government and other possible descriptive devices for particular phenomena, with the ultimate goal of an understanding of rule government in universal grammar. It should be clear that the lack of final solutions does not imply that cross-linguistic comparison and generalization cannot proceed. Indeed such endeavors may well suggest solutions to some of the general questions raised here.

FOOTNOTES

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[2] The decision to make this distinction has analytic consequences in the case of rules for which both bi-clausal and uni-clausal analyses have been proposed, and vice-versa. For example, if Passive is taken as a bi-clausal rule (cf. R. Lakoff 1971), then be or get govern it, and all the verbs usually cited as exceptions to Passive (e.g. have, cost, resemble etc.) must be analyzed as predicted by one of these conditions, or be arbitrary exceptions in a system much more complicated than that of G. Lakoff 1965. If the conditions would then have to be extended so that in this case they would have all the properties typical of trigger-classes, but not victim-classes, then the distinction could be considered

invalid, but an alternative that would be plausible if this was the only such case is that this should be taken as evidence that Passive is not a bi-clausal rule.

[3]It may be that Lakoff was confusing here not only exceptionality and government, but also what later came to be referred to as controlling (cf. Postal 1970, G. Lakoff 1973). Compare his remark a page later:

> ...the theory must be able to define a mechanical procedure such that, given as input a transformational rule and the tree it is operating on, the procedure will find the item in the tree which governs the rule. (29)

This takes it for granted that all rules are governed. Yet the way in which a rule like Relative Clause Formation, or WH-Movement if you prefer, is 'governed' is quite different from the way in which, say, Equi-NP-Deletion is governed. The mechanical procedure for WH-Rel-Movement would involve searching the entire tree for an NP in a certain structural configuration ($[_{NP} \underline{\hspace{1cm}} S]_{NP}$) that was coreferential to the WH-noun phrase to be moved. (Alternatively, finding an NP coreferential to the one in this configuration.) The procedure for Equi, say, would involve checking to see if the verb of the cyclically relevant clause was marked [+Rule of Equi]. The WH-Rel-Movement procedure would not be to search for an NP marked [+Rule of WH-Rel-Movement]; such a marking would be neither sufficient nor necessary, given all the other requirements for the description of relative clauses.

[4]Have and get in the sense of 'obtain' occur in the passive under certain circumstances in certain dialects or styles of speech. Thus:

i.   This book may be had/got for \$2/from better newsdealers/at the newsdealer's.
iia. You may have this book for \$2/*from better newsdealers.
iib. You may get this book for \$2/from better newsdealers/at the newsdealer's.
iiia. *This book was had for \$2/from one of the better newsdealers.
iiib. This book was got for \$2/from one of the better newsdealers.
iva. People had this book for \$2/*from one of the better newsdealers.
ivb. People got this book for \$2/from one of the better newsdealers.

Sentences like (iva) are, interestingly, grammatical only if the subject is taken to refer to the seller of the book (the pre-sale owner) rather than to the buyer (or post-sale owner) as in (ii).

[5]Discussion of this matter may be found in Gordon and Lakoff (1971), Morgan (to appear, forthcoming).

[6]Another alternative, proposed in Sadock 1974 (p. 151) would have the beware-clause as the object of a general abstract imperative performative verb IMPERE, which itself would be embedded as the object of a verb of causation whose subject is a statement of the speaker's assessment of the conditions prompting the act of 'impering', as indicated in (i), which would represent underlying structures for warnings.

i.   MY ASSUMPTION THAT YOUR NOT DOING VP WILL CAUSE S CAUSES ME TO IMPERE YOU TO DO VP

Perhaps, under this alternative, given a host of yet-to-be formulated transformations which would, among other things delete negatives, an analysis like (ii) could be given for (26) which would indicate correctly the act warned against.

    ii.   MY ASSUMPTION THAT YOUR NOT BEWARING OF THE DOG WILL CAUSE YOU TO NOT TO BE ABLE TO GET TO THE DOOR IN ONE PIECE CAUSES ME TO IMPERE YOU TO BEWARE OF THE DOG.

First of all, however, this analysis requires the underlying structure counterpart of beware to be negated, and occur in the subject of a verb of causation, and thereby eliminates an explanatory underlying structure constraint, since beware does not occur in the surface counterparts of these environments (so any constraint would have to be at least global):

    iii. ??Don't beware of the dog now.
    iv. *For you (not) to beware of the dog will make your clothes get ruined.

Second, there seems to be no way to map (25) onto a structure like (i) and so preserve a claim that in the underlying structure of beware-sentences, the node that surfaces as beware must occur at least once in the complement of IMPERE. That is, the sense of (25) can be mapped onto (v), but there is no place for an underlying representation of 'I expect'.

    v.   MY ASSUMPTION THAT YOUR NOT BEWARING OF THE DOG WILL CAUSE YOU TO COME HOME WITH YOUR PANTS IN SHREDS CAUSES ME TO IMPERE YOU TO BEWARE OF THE DOG.

Again, even such a revised constraint for beware is inadequate since it says that it is enough for BEWARE to be in the complement of IMPERE, sentences like (vi) ought to be acceptable, and they are not.

    vi. *Beware of the dog, in the name of the law/Queen.

Conceivably, some underlying structure constraint could be formulated which 'looks at' not just the immediate environment of BEWARE, but the entire tree in which it is embedded, but in any case, the difficulty in fitting (25) into such a theory disappears if the constraint on BEWARE is stated in terms of the pragmatics of the use of surface forms containing beware.

[7]Examples (23b, c) involve the report of a warning, rather than the conveying of one, and if taken as a report of a warning, (22f) doesn't sound as unacceptable as the asterisk indicates. Likewise, (i) is acceptable if understood as intended as a request for a warning, or for a repetition of one, whereas (ii) is bizarre and contrasts with (iii), which demands (as a sort of catechism) that the addressee summarize a warning just given. Sentence (iv), with the normal question intonation, as indicated, is simply not acceptable.

    i.   What should I beware of?
    ii.   ??What will I beware of?
    iii. What will you beware of now:
    iv. What will you beware of now?

Items like knock it off, cut it out in the sense 'stop it' seem to have a similar pragmatically determined distribution; only when intended to

convey or report an imperative can they occur in sentences like You can knock it off now, If you don't cut it out, I'll spank you, You're expected to knock it off when the minister gets here. cf. *You knocked it off yesterday.

[8]Postal lists more than two dozen (1974:305). The list will no doubt vary idiosyncratically from speaker to speaker. At least three items on Postal's list, know, think, and understand, are not subject in our speech to the constraint as Postal states it.

[9]Except for "empty" pronouns like there, weather-it, and Extraposition-it, and even these are often of dubious acceptability. Thus (i) and (ii) are a little better than (34) but worse than (35-39).
    i. I guessed it to be below 20⁰ outside.
   ii. They revealed there to have been an explosion.

[10]This SSC may appear to be a global constraint in sheep's clothing. That is, it is equivalent to a global constraint that says that no rule may completely wipe out the complement of attempt, assuming that there do not happen to be any rules which could re-insert a complement or a 'place-holder' with phonetic substance. Actually, if sentences like (42) are derived from structures in which the underlying complement of attempt is a clause, as we have been assuming, things are even more complicated, because action nominalization complements may be deleted without a remnant, although semantically equivalent infinitival complements may not be so deleted. This situation, illustrated by the difference between the examples in (i) and those in (ii), suggests that at the least, a global condition is involved.
    ia. The French have attempted more Channel crossings than the British have attempted.
    ib. The French have succeeded in more Channel crossings than the British have even attempted.
   iia. *The French have attempted/tried to cross the Channel more times than the British have attempted.
   iib. *The French have managed to cross the Channel more times than the British have even attempted.

[11]Cf. Lakoff 1965, and discussion in chapter 3, sec. B, of Green 1974.

[12]For Shakespeare, object deletion was permissible for attempt, as evidenced by the line: "Our doubts are traitors, And make us lose the good we oft might win By fearing to attempt" (Measure for Measure, I, iv, 79-81). Infinitive verb phrase deletion was apparently also possible for Shakespeare, as in: "You are to know, That prosperously I have attempted, and With bloody passage led your wars even To the gates of Rome" (Coriolanus V, vi, 74-7). It is, of course, conceivable that at one time the restrictions on attempt reflected its being an exception and that the present constraint results from a reinterpretation of its restricted environments in surface structure.

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PAPERS ON AFRICAN LINGUISTICS

Edited by
Eyamba G. Bokamba
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Charles W. Kisseberth

i

TABLE OF CONTENTS

FOREWORD

:

The African Language and Linguistics Program in the Department of Linguistics at the University of Illinois was started in 1969. In the Spring of 1970, six months after the inception of the program, the Department organized and sponsored the first Conference on African Languages and Linguistics. The African Studies Program and the Office of International Programs and Studies helped with financial support. The Conference effectively identified the University of Illinois as a potential African language and linguistics center. In 1971, the proceedings of this conference were published by Linguistic Research, Inc., edited by Chin-W. Kim and Herbert Stahlke, entitled Papers in African Linguistics. Since that first gathering, the Conference on African linguistics has become an annual international forum of scholars in the field.

The present issue of Studies in the Linguistic Sciences, which is devoted to African linguistics in recognition of the growing strength of the program, constitutes another step in the development of the program. Although the focus of the research in recent years has been on Bantu languages, a fact which is reflected in part by the number of papers based on Bantu languages in this volume, the scope of the program has always been much broader, as exemplified by publications of our students and faculty members since 1971. However, our focus and strength has been in the area of Bantu and West African languages: four doctoral dissertations have been submitted on the languages of these areas. Our language program, which now includes four languages (Hausa, Lingala, Swahili, and Wolof), also focuses on these two areas.

Five of the seven papers in this issue are devoted to syntax; they address themselves to questions raised by recent work in generative grammar on grammatical relations, pragmatics, and language universals. The other two papers are on phonology and sociolinguistics. The paper on phonology deals with a number of issues, two of which are the role of grammatical structure in phonology and the multiple application of rules. The paper on sociolinguistics deals with the problem of language in education within the framework of the sociopolitical philosophy of

authenticity in Zaire. The reader will find in this set of papers not
only copious data on the six Bantu languages studied, but also well-
balanced descriptive and theoretical essays that are strongly data-
oriented. While the issues dealt with here are not new, the body of
data presented in these papers make them more compelling.

It is our hope that the present volume will make a small contri-
bution in the ever-growing field of African linguistics. As always,
comments and criticisms from colleagues are most welcome. We gratefully
acknowledge the support of the African Studies Program toward the
production of this issue.

Eyamba G. Bokamba
Charles W. Kisseberth

REFLEXIVIZATION IN CHIMWI:NI

Mohammad Imam Abasheikh

0. Introduction.

This paper will discuss the phenomenon of reflexivization in
Chimwi:ni. The primary concern will be to establish (1) the direction
in which the reflexivization rule operates (i.e. what is the order of
the antecedent relative to the reflexive pronoun?), (2) which NPs in a
clause are eligible to undergo reflexivization, (3) which NPs in a
clause are eligible to serve as the antecedent, or "trigger", of
reflexivization, and (4) the domain of reflexivization (i.e. is
reflexivization clause-bounded or not?). This paper represents the
first attempt to explore the phenomenon of reflexivization in Chimwi:ni
and thus must be understood to be of a preliminary nature.

1. Background.

1.1. The language. The language that we are dealing with here is known
to some Europeans as Bravanese, but the native population refer to it as
Chimwi:ni. This name consists of two morphemes: chi- is a prefix that
is characteristically used to mean 'in the way or manner of', but also
indicates 'the language of', and mwi:ni is the native name of the town
where the language is spoken. This town, known to outsiders as "Brava"
or "Barawa", is a coastal town located in southern Somalia some two
hundred kilometers south of Mogadishu.

Chimwi:ni is a Bantu language very closely related to Swahili,
especially the Swahili dialects spoken by the Bajunis, the inhabitants
of the so-called islands of the Bajunis located off the coast of
southern Somalia and northern Kenya. Chimwi:ni has sometimes been
referred to as a dialect of Swahili (cf. Whiteley 1965 and Goodman 1967),
but this appelation is open to serious doubt. The differences between
Chimwi:ni and Swahili are substantial at all levels of grammatical and
lexical structure; a discussion of these differences is beyond the scope
of this paper, however.

1.2. Word order. While the basic word order of Chimwi:ni is SVO, there
is considerable flexibility. One may move words from their normal
positions in order to topicalize them, give them added emphasis, convey

certain semantic contrasts not otherwise morphologically marked, and
so on. Thus, while (1) below represents the 'unmarked' word order,
both (2) and (3) are also possible.

(1) Ali Ø-chi-ji:le cha:kuja

     SP OP ate   food

'Ali ate the food.'

(Note: SP refers to the obligatory subject prefix (which in
this example happens to be phonologically zero) that must occur
on a finite verb; OP refers to the object prefix, which in
Chimwi:ni is generally used to definitize the object of the
verb. See below for more discussion.)

(2) cha:kuja, Ali Ø-chi-ji:le

    food   SP OP ate

'As for the food, Ali ate it.'

(3) Ø-chi-ji:le Ali cha:kuja (In this example the action is being
                                emphasized.)

In the case of (4) and (5) below, the difference in word order serves to
signal a difference in the definiteness of the subject of the sentence.

(4) mwa:na Ø-ile

    boy   SP came

'The boy came.'

(5) Ø-ile mwa:na

    SP came boy

'A boy came.'

In the present paper, examples will generally be restricted to those
involving the basic word order.

1.3. <u>Verb structure</u>. Chimwi:ni is an agglutinative language, with verbs
showing the greatest morphological complexity. Verbs may be very simple
in structure (e.g. a singular imperative may consist of just the verb
root plus the terminal vowel -a; cf. j-a 'eat!' or olok-a 'go!') or quite
complex (e.g. nt^{h}a-wa-na-ki-chi-le:t-el-a 'they are not bringing (it) to
us'). The linear structure of the finite verb is roughly as follows.

$$(Neg)-SP-(T_1)-(OP)-Root-(DA)-(T_2)-(Pass)-TV$$

where Neg = negative morpheme, T = tense marker, DA = one or more deriva-
tional affixes, Pass = the passive marker, and TV = the terminal vowel
that obligatorily terminates any verbal form. Not all of the elements
in parentheses may co-occur; e.g. T_1 and T_2 are mutually exclusive, as

are Neg and T_2. It is also the case that either T_1 or T_2 must appear
(on a finite verb), both may not be absent. The examples given below
illustrate some of the possible combinations of grammatical elements
in a Chimwi:ni finite verb.

(6) a. wa-xadá'-i:ł-e
        SP-cheat-T_2-TV
        'They cheated.'

    b. nt^{h}a-wa-m-xada'-a
        Neg-SP-OP-cheat-TV
        'They didn't cheat him.'

    c. ha-wa-ta-m-xada'-a
        Neg-SP-T_1-OP-cheat-TV
        'They will not cheat him.'

    d. ha-wa-ta-m-xáda'-ił-a
        Neg-SP-T_2-OP-cheat-DA-TV
        'They will not cheat (someone) for/on him.'

2. Grammatical Relations in Chimwi:ni.

It will be shown below that the type of grammatical relationship
that holds between a NP and a verb is critical to the application of
reflexivization in Chimwi:ni. Consequently, it is necessary at this point
to provide a brief description of some of the main features of grammatical
relations in the language. The reader is referred to Kisseberth and
Abasheikh (1977) for a fuller discussion of some of the problems revolving
around the notion 'object' in Chimwi:ni.

As is generally the case in Bantu languages, grammatical relations
such as 'subject-of' or 'object-of' are not formally marked on nouns in
any way (i.e. there is no system of cases operative in the language).
Nouns are uninflected. A basic division can be made between NPs that
appeared 'marked' and those that appear 'unmarked'. By 'marked' we
mean preceded by a preposition or followed by a (locative) postposition.
By 'unmarked' we mean lacking any such pre- or postposition. It is
rather clear that in Chimwi:ni marked NPs do not function either as
subjects or objects (the language lacks the typically Bantu constructions
where locative phrases function as grammatical subjects and/or objects).
The grammatical roles of unmarked NPs are rather more complex. Grammarians

have generally identified grammatical relations on the basis of certain morphosyntactic or syntactic behavior which are briefly summarized below.

2.1. The subject. The subject of a Bantu finite verb is generally taken to be that NP which (1) occurs in pre-verbal position in sentences with neutral word order, (2) governs the selection of the subject prefix that obligatorily occurs on the verb, and (3) is eligible to be 'demoted' via the syntactic process of passivization (in which case it will appear marked by the preposition na and will, typically, be postposed to the end of the verb phrase). Doubtless the criterion that is most consistently used is verb agreement. It should be pointed out here that Chimwi:ni has a well-developed noun class system, such that each nominal belongs to one of some twelve noun classes. A noun class is identified in terms of the noun class prefix that appears on the noun itself and the pattern of agreement that the noun determines. Consider, for example, (7) below.

    (7) a. chi-bu:ku chi-b-e:l-e
           NCP   SP-lose-T_2-TV
           'The book got lost.'

       b. zi-bu:ku zi-b-e:l-e
           NCP   SP-lose-T_2-TV
           'The books got lost.'

       c. mu-ke Ø-liz-il-e
           NCP   SP-cry-T_2-TV
           'The woman cried.'

       d. wa-ke wa-liz-il-e
           NCP   SP-cry-T_2-TV
           'The women cried.'
           Note: NCP = noun class prefix.

    The above examples illustrate the point that noun classes generally are paired into singular and plural classes. Thus a noun like chibu:ku 'book' belongs to a class which has a chi- prefix on the noun and governs a chi- subject prefix on the verb. Nouns of this class typically have a plural form with zi- as the noun class prefix and zi- as the corresponding SP on the verb. It should be noted that the noun class prefix is not always phonologically identical to the agreement morpheme that the noun governs. Thus muke 'woman' has mu- as its noun class prefix, but governs a Ø form of the SP.

A noun such as chibu:ku in (7a) would be said to be the subject
of the verb on the basis of the fact that it controls the selection of the
SP on the verb. Furthermore, chibu:ku is in pre-verbal position. The
syntax of (7a) is such that chibu:ku cannot be moved out of subject
position via passivization. This inability to undergo passivization
would not ordinarily prevent Bantuists from identifying chibu:ku as the
subject. Consider now (8).

    (8) a. mu-ke Ø-chi-som-a   chi-bu:ku   .

            woman SP-T$_1$-read-TV   book

            'The woman was reading a book.'

        b. chi-bu:ku sh-chi-som-ow-a   na: mu-ke

            book   SP-T$_1$-read-Pass-TV by woman

            'The book was being read by the woman.'

            (Note: the prefix /chi/ is converted to sh before a
              voiceless obstruent in many contexts.)

In (8a) muke governs the choice of the SP, and occurs in pre-verbal
position. (8b) reveals that muke can be demoted via passivization. These
observations have led to the view that muke is the subject of (8a).

2.2. The object. The notion 'direct object' raises a number of problems
in Chimwi:ni as in other Bantu languages (for some discussion, see
Kisseberth and Abasheikh 1977). For present purposes we will take the
following (traditional) properties as serving to identify a direct
object in Chimwi:ni: (1) it is the NP that controls the choice of the
object prefix (OP) that may appear immediately before the verb root;
(2) it is the NP that, in neutral contexts at least, immediately follows
the verb; and (3) it is the NP that may be promoted to subject via the
syntactic process of passivization. Take (9) as an example.

    (9) mu-ke Ø-m-p-el-e   Mu:sa chi-bu:ku

        woman SP-OP-give-T$_2$-TV   book

        'The woman gave Musa a book.'

The OP in (9) has the shape -m-, which is the shape determined by a
human noun such as Mu:sa. It is ungrammatical in Chimwi:ni to replace
-m- in (9) with the OP governed by chibu:ku. Notice that not only does
Mu:sa govern the OP, it also immediately follows the verb. This represents
the normal word order. It is possible to put chibu:ku after the verb,
but this has the effect of stressing chibu:ku heavily. The OP will

continue to be -m- even if <u>chibu:ku</u> is put after the verb. Not only does <u>Mu:sa</u> govern the OP and follow the verb, it is also eligible to be passivized. (10) is grammatical.

(10) Mu:sa Ø-p-el-a   chi-bu:ku · na: mu-ke
       SP-give-T$_2$-TV   book   by   woman

'Musa was given a book by the woman.'

(The passive of a verb containing T$_2$--perfective--is phonologically complex; the passive morpheme -<u>o:w</u>- is not overtly realized. The reader is referred to Kisseberth and Abasheikh 1976 for discussion.)

Although (10) is grammatical, (11) is not.

(11) *chi-bu:ku sh-p-el-a   Mu:sa na: mu-ke
     book   SP-give-T$_2$-TV   by   woman

'The book was given to Musa by the woman.'

Just as <u>chibu:ku</u> cannot govern the OP in (9), it also cannot be promoted to subject via passivization. We shall thus consider <u>Mu:sa</u> to be the direct object in (9). <u>chibu:ku</u> in (9) will be referred to as a secondary object.

There are in Chimwi:ni a number of simple verbs (i.e. verbs not 'extended' by means of derivational affixes) like -<u>p</u>- 'give' which allow two unmarked NPs to follow them in post-verbal position. The NP that is indirectly affected by the action (e.g. <u>Mu:sa</u> in our example sentence) will function as the direct object, whereas the NP that is directly affected by the action (<u>chibu:ku</u> in our example) will function as the secondary object.

In the case of simple verbs that take a single unmarked non-subject NP, that NP will be the direct object if it is the 'patient' or 'recipient' of the action. Thus in <u>cha:kuja</u> 'food' is the direct object in (12a).

(12) a. mu-ke Ø-sh-pish-il-e   ch-a:kuja
     woman SP-OP-cook-T$_2$-TV   food

'The woman cooked the food.'

   b. ch-a:kuja sh-pish-il-a   na: mu-ke
      food   SP-cook-T$_2$-TV by   woman

'The food was cooked by the woman.'

If a simple verb is extended by means of a derivational affix--e.g. the so-called 'applied' suffix, which indicates that the action is done for someone's benefit, or is directed towards someone or something, or is

done by means of some instrument--an 'extra' unmarked NP will typically
occur in the sentence. This NP will typically function as the direct
object of the extended verb. Take (13) as an example.

    (13) a. mu-ke Ø-m-pik-il-il-e   mw-a:na ch-a:kuja
          woman SP-OP-cook-DA-T_2-TV child   food
          'The woman cooked the food for the child.'

      b. mw-a:na Ø-pik-il-il-a   ch-a:kuja na: mu-ke
          child   SP-cook-DA-T_2-TV food   by woman
          'The child was cooked-for food by the woman.'

In (13a) it is mwa:na 'child', the beneficiary of the action, that is
the direct object of the verb, not cha:kuja. Thus mwa:na can be
passivized--cf. (13b), whereas cha:kuja cannot be. (14) is ungrammatical.

    (14) *ch-a:kuja sh-pik-il-il-a mw-a:na na: mu-ke
        food   SP-DA-T_2-TV   child by woman
        'Food was cooked-for the child by the woman.'

    It should be emphasized that although a direct object will govern
the choice of an OP, it is not the case that the OP will appear on a
verb whenever a direct object is present in the clause. If an OP occurs,
it signals a definite direct object. Lack of an OP is associated with
an indefinite direct object (or at least an object whose definiteness
is not an issue). The noun itself is not marked for definiteness. Some
examples:

    (15) a. Ali Ø-j-il-e   ch-a:kuja
          SP-eat-T_2-TV   food
          'Ali ate some food.'

      b. Ali Ø-chi-j-il-e   ch-a:kuja
          SP-OP-eat-T_2-TV   food
          'Ali ate the food.'

      c. Ali Ø-bish-il-e mw-a:na
          SP-hit-T_2-TV   child
          'Ali hit a child.'

      d. Ali Ø-m-bish-il-e   mw-a:na
          SP-OP-hit-T_2-TV child
          'Ali hit the child.'

3. The Verbal Extensions.

The derivational affixes that are employed to 'extend' the meaning of a simple verb are typically referred to by Bantuists as 'verbal extensions', and a verb that contains one of these affixes is referred to as an 'extended verb'. As we noted above, the direct object of an extended verb is generally different from the direct object of the corresponding simple verb. Consequently, any investigation of syntactic problems in Chimwi:ni involving grammatical relations will necessarily deal to a large extent with extended verbs. The purpose of this section is to provide some additional information regarding those verbal extensions in Chimwi:ni that will be most crucially involved in subsequent discussion: namely, the applied suffix and the causative suffix.

The applied verb contains a suffix -il- (or one of a number of morphophonemic variants: -el-, -il-, -el-, -iliz-, -elez-). The applied verb has a multiplicity of senses; we mention just three here: benefactive, directional, and instrumental. This suffix is totally productive in all three of these senses, thus a given verb is potentially three-ways ambiguous (though in most instances the meaning of the verb root will exclude one or more of the senses).

In its benefactive use, the applied verb indicates either that the action is done to someone's (or something's) benefit or to someone's (or something's) detriment. (16) illustrates the benefactive applied.

(16) a. Ali Ø-m-pik-il-il-e mw-a:limu ch-a:kuja
         SP-OP-cook-DA-T$_2$-TV teacher   food
         'Ali cooked the food for the teacher.'

     b. Ali Ø-m-big-il-il-e   mw-a:limu mw-a:na
         SP-OP-hit-DA-T$_2$-TV teacher   child
         'Ali hit the child on the teacher.'

In (16a) mwa:limu 'teacher' is the beneficiary of the action (-pik- 'cook') in that the food has been cooked for his benefit (e.g. he is to eat it). In (16b), mwa:limu is also the beneficiary, but the action is done to his detriment: the meaning conveyed is that Ali hit the teacher's child, and the teacher disapproves of his child being struck.

Directional applied verbs indicate that the action initiated by the subject is directed to someone or something; in other words, they express motion towards. Examples:

(17) a. Ali Ø-m-let-el-el-e mw-a:limu ch-a:kuja
    SP-OP-bring-DA-T$_2$-TV teacher food
  'Ali brought food to the teacher.'

 b. Ali Ø-mw-andik-il-il-e mw-a:limu Ø-xati
    SP-OP-write-DA-T$_2$-TV teacher letter
  'Ali wrote a letter to the teacher.'

Instrumental applied verbs convey the notion of performing the action of the verb root 'by means of' or 'with' a certain instrument. Thus:

(18) Ali Ø-tind-il-il-e: Ø-nama chi-su
   SP-cut-DA-T$_2$-TV meat knife
  'Ali cut the meat with a knife.'

The applied verb thus expresses basically 'prepositional' concepts such as 'for', 'to', and 'with'. In each instance, the noun phrase that is related to the prepositional concept--the beneficiary in (16), the NP towards whom the action is directed in (17), and the instrument in (18)--functions as the direct object of the applied verb. (In the case of the instrumental applied there are various complications which are discussed in detail in Kisseberth and Abasheikh 1977.)

  Causative verbs in Chimwi:ni are formed by means of a suffix having the shape -ish- (alternating with -esh- by virtue of a vowel harmony process) or -iz- (alternating with -ez- by the same vowel harmony principle) or by a modification of the final consonant of the verb root. The causative verb conveys the idea of 'make someone Verb' or 'cause someone to Verb'. The precise implication of the causative verbal form is, however, subject to variation. The notion of 'cause' that is conveyed is a very broad one and may include any influence that can contribute to a particular result; a causative verb may (in some cases) indicate assistance, persuasion, or permission rather than force. Some examples:

(19) a. Ali Ø-m-tez-esh-ez-e mw-a:na
    SP-OP-play-DA-T$_2$-TV child
  'Ali caused the child to play.'

 b. Ali Ø-m-duguw-ish-iz-e mu:-nt^{h}u
    SP-OP-limp-DA-T$_2$-TV man
  'Ali helped the man limp along.'

c. Ali Ø-mw-iŋgíz-Ø-e   mw-a:na
    SP-OP-cause-T_2-TV child
       enter

'Ali allowed the child to enter.'

Note: the verb -iŋgil- forms its causative by modifying its final consonant to z.

In a causative construction, it is the noun phrase that functions as the subject of the simple non-causative verb that assumes the role of direct object of the causative verb. Consider a sentence such as (20):

(20) mu-ke Ø-pish-il-e   ch-a:kuja
     woman SP-cook-T_2-TV food
     'The woman cooked the food.'

If a causative verb is formed from -pik- 'cook', it will be the person who does the cooking that will function as direct object of the causative verb, as (21) illustrates.

(21) Ali Ø-m-pik-ish-iz-e   mu-ke ch-a:kuja
      SP-OP-cook-DA-T_2-TV woman   food
     'Ali made the woman cook the food.'

It is muke in (21) that governs the OP and follows immediately after the verb and can be passivized; cf. (22).

(22) mu-ke Ø-pik-ish-iz-a   ch-a:kuja
     woman SP-cook-DA-T_2-TV   food
     'The woman was made to cook the food.'

Note: the reader is reminded that the passive of a verb containing T_2 does not contain an overt passive morpheme, though the passive form can still be distinguished from an active form on various grounds. See Kisseberth and Abasheikh 1976.

cha:kuja in (21) cannot control the OP and cannot be passivized; (23) is ungrammatical.

(23) *ch-a:kuja sh-pik-ish-iz-a: mu-ke
      food   SP-cook-DA-T_2-TV woman

The applied and the causative verbal extensions may be combined to convey the notion 'cause someone to do something for/on someone.' (24) illustrates this usage.

(24) a. Ali Ø-m-tek-esh-elez-Ø-e   mw-a:limu mw-a:na
         SP-OP-laugh-DA-DA-T_2-TV teacher   child
       'Ali made the child laugh on the teacher.'

b. Ali Ø-m-shik-ish-iłiz-e I:sa mw-a:na noka
    SP-OP-hold-DA-ДA-TV   child snake
'Ali made the child hold a snake on Isa.'

In this construction it is the beneficiary that functions as the direct
object of the applied causative verb, not the noun phrase referring to
the individual who performs the action of the simple verb (mwa:na in the
above example).

4. Reflexive Pronouns. Bantu languages typically have an OP that plays
the role of a reflexive pronoun. In Chimwi:ni no such OP is in use (though
vestigal instances of the prefix can be found). Chimwi:ni now uses the
morpheme ru:hu-, a loanword from Arabic meaning 'soul' or 'spirit', plus
a possessive ending as a reflexive pronoun. Possessive endings in
Chimwi:ni consist of an agreement morpheme (determined by the noun class
of the noun to which the possessive ending is added) plus a person/number
suffix. The full form of the Chimwi:ni reflexive pronouns are given in
(25) below.

(25) ru:hu-y-a   'myself'
      ru:hu-y-o   'yourself'
      ru:hu-y-e   'himself'

      ruhu-z-i:tu   'ourselves'
      ruhu-z-i:nu   'yourselves'
      ruhu-z-a:wo   'themselves'

We will not be concerned in this paper with the question of whether
reflexive pronouns are to be derived by transformation from underlying
full noun phrases (as in early transformational analyses) or accounted for
by means of output conditions/interpretation rules, etc. For convenience
we will speak of reflexivization in Chimwi:ni as a process that (somehow)
specifies that a reflexive pronoun will appear in a certain position in
a sentence provided that there is a co-referential NP (the 'antecedent' or
'trigger') located at some other position in the sentence. The position
where the reflexive pronoun appears will be labeled the 'target'.

In Chimwi:ni reflexivization seems to have the following primary
features (the first three of which at least are found in many natural
languages).

(I) Reflexivization works in only one direction, namely, from left to right (i.e. the antecedent must precede the target).

(II) Reflexivization is clause-bounded (i.e. the antecedent and the target must be in the same clause at some point in the derivation).

(III) The antecedent must always be a subject (or a NP that was a subject at some point in the derivation of the sentence).

(IV) The target NP must always be a direct object (or a NP that was a direct object at some point in the derivation).

Let us begin by considering the data in (26).

(26) a. *Mu:sa$_i$ Ø-xada'-ił-e   Mu:sa$_i$
                   SP-cheat-T$_2$-TV

     *'Musa$_i$ cheated Musa$_i$.'

   b. Mu:sa Ø-xada'-ił-e   ru:hu-y-e
                   SP-cheat-T$_2$-TV

     'Musa cheated himself.'

   c. *mi n-xada'-ił-e   ru:hu-y-é
        I   SP-cheat-T$_2$-TV   himself

     *'I cheated himself.'

   d. *ru:hu-y-e i-xada'-ił-e   Mu:sa
        himself   SP-cheat-T$_2$-TV

     *'Himself cheated Musa.'

The ungrammaticality of (26a) as compared with the grammaticality of (26b) suggests that Chimwi:ni, like many other languages, disallows sentences of the structure NP-V-NP where the two NPs are co-referential and identical in form. Instead of this structure one is allowed to have another structure where a reflexive pronoun occurs instead of one of the NPs. (26c) shows that the occurrence of reflexive pronouns is not (in general) free; that is, reflexive pronouns occur only when there is another NP in the sentence co-referential to the reflexive pronoun. (26d) shows that the reflexive pronoun may not precede the NP that is its antecedent. In other words, reflexivization is from left to right, the antecedent preceding the target.

The above observations are not, of course, very surprising. Nor is it surprising that reflexivization in Chimwi:ni is clause-bounded. Evidence for this claim is provided by the data in (27).

(27) a. Mu:sa Ø-had-iḻ-e kuwa: mi ni-m-ḻum-iḻ-é
          SP-say-T_2-TV that I SP-OP-bite-T_2-TV
          'Musa said that I bit him.'

    b. *Mu:sa Ø-had-iḻ-e kuwa: mi n-dum-iḻ-e ru:hu-y-é
          SP-say-T_2-TV that I SP-bite-T_2-TV himself
          *'Musa said that I bit himself.'

(27b) shows that even if the antecedent precedes the target, a reflexive cannot appear if the target is in a sentential complement and the trigger is outside that complement. In (27b) the target is in object position in the complement clause. An ungrammatical sentence also results if the target is the subject of the complement sentence.

(28) a. Mu:sa$_i$ Ø-had-iḻ-e kuwa: ye$_i$ Ø-m-ḻumiḻ-e mw-a:na
          SP-say-T_2-TV that he SP-OP-bite-T_2-TV child
          'Musa said that he bit the child.'

    b. *Mu:sa Ø-had-iḻ-e kuwa ru:hu-y-e i-m-ḻum-iḻ-e mw-a:na
          SP-say-T_2-TV that himself SP-OP-bite-T_2-TV child

The examples in (27) and (28) show that reflexivization does not 'go down into' complement clauses marked by <u>kuwa</u> 'that'. There are, of course, instances where the subject of a <u>kuwa</u>-complement appears to be raised into a higher clause and thus is eligible to assume a reflexive shape. Take (29) as an example.

(29) a. Haḻi:ma$_i$ Ø-amin-iḻ-e kuwa: ye$_i$ ni mw-a:limu
          SP-believe-T_2-TV that she is a teacher
          'Halima believed that she was a teacher.'

    b. *Haḻi:ma Ø-amin-iḻ-e kuwa ru:hu-y-e ni mw-a:limu
          SP-believe-T_2-TV that herself is a teacher
          *'Halima believed that herself was a teacher.'

    c. *Haḻi:ma$_i$ Ø-amin-iḻ-e: ye$_i$ kuwa ni mw-a:limu
          SP-believe-T_2-TV she that be a teacher
          *'Halima$_i$ believed her$_i$ to be a teacher.'

    d. Haḻi:ma Ø-amin-iḻ-e ru:hu-y-e kuwa ni mw-a:limu
          SP-believe-T_2-TV herself that is a teacher
          'Halima believed herself to be a teacher.'

In (29b) we see that the subject of the complement cannot be reflexive

even though the main clause has a co-referential NP. In (29c-d) we see that if the subject of the complement is raised out of the lower clause, this raised NP must be reflexive due to the occurrence of an antecedent in the higher clause.

Let us turn now to the main interest of the present paper: namely, the claim that only subjects trigger reflexivization and only direct objects are targets of reflexivization in Chimwi:ni. We consider first of all a number of pairs of sentences which show that well-formed reflexive constructions occur when the conditions mentioned above are satisfied. First of all, take the case of a simple verb stem followed by one unmarked NP.

(30) a.   mw-a:na Ø-m-łum-ił-e   Nu:ru
         child   SP-OP-bite-T_2-TV
         'The child bit Nuru.'

    b.   mw-a:na Ø-łum-ił-e   ru:hu-y-e
         child   SP-bite-T_2-TV himself
         'The child bit himself.'

In (30a), Nu:ru is the direct object (it controls the OP, is subject to passivization). In (30b) we see that a reflexive pronoun is able to appear in the slot that Nu:ru occupies in (30a). Thus (30b) attests to the ability of a direct object to undergo reflexivization. The antecedent in this example is the subject of the verb (mwa:na controls the SP on the verb, can be demoted via passivization, etc.).

Consider now a simple verb stem such as -p- 'give' that may be followed by two unmarked NPs.

(31) a. ni-m-p-eł-e   Ali gardará
        SP-OP-give-T_2-TV   fault
        'I attributed the fault to Ali.'

    b. m-p^h-eł-e   ru:hu-y-a gardará
        SP-give-T_2-TV myself   fault
        'I attributed the fault to myself.'

As was pointed out earlier, when a simple verb allows two unmarked NPs to follow, it is the "indirectly affected" NP that functions as direct object of the verb. Thus in (31a) it is Ali that is the direct object. And (31b) shows that a reflexive pronoun may occur in this slot. Again, the antecedent is the subject of the verb.

Consider next the benefactive applied form of the verb.

(32) a. Ali Ø-m-pik-il-il-e   mw-a:na   ch-a:kuja
             SP-OP-cook-DA-T$_2$-TV child   food
         'Ali cooked food for the child.'

     b. Ali Ø-pik-il-il-e   ru:hu-y-e ch-a:kuja
             SP-cook-DA-T$_2$-TV himself   food
         'Ali cooked food for himself.'

Recall that the beneficiary in a benefactive applied construction functions as the direct object of the verb. Thus mwa:na in (32a) is the direct object. (32b) shows that a reflexive pronoun may appear in the direct object position of the benefactive applied verbal construction. Again, the antecedent is the subject of the verb.

Consider next the causative verb.

(33) a. n-song-esh-ez-e: chi-ti   ch-oloko:-ní
             SP-approach-DA-T$_2$-TV chair   window-loc.
         'I moved the chair closer to the window.'

     b. n-song-esh-ez-e   ru:hu-y-a ch-oloko:-ní
             SP-approach-DA-T$_2$-TV myself   window-loc.
         'I moved myself closer to the window.'

In (33a), chiti functions as the object of the causative verb; in (33b) we see that a reflexive pronoun can occupy the place of chiti in the causative construction.

The preceding examples illustrate cases where the conditions for reflexivization are satisfied: namely, the trigger is a subject and the target is a direct object. Let us now try to show that if these conditions are not satisfied a reflexive pronoun cannot occur.

We pointed out earlier that NPs in Chimwi:ni are either "marked" (i.e. preceded by a preposition or followed by a locative suffix) or "unmarked". Unmarked NPs are either direct objects or secondary objects. (This is not actually an exhaustive characterization of NPs in Chimwi:ni, but it will suffice for present purposes.) We will examine first the question of whether marked NPs can participate in reflexivization either as triggers or targets.

Consider first of all (34).

(34) a. ŋ-k^hod-el-e   na Ali ka tarafu ya mw-a:ná
     SP-talk-T$_2$-TV to   about   child
     'I talked to Ali about the child.'

   b. *ŋ-k^hod-el-e   na Ali ka tarafu ya ru:hu-y-á
     SP-talk-T$_2$-TV to   about   myself
     'I talked to Ali about myself.'

   c. ŋ-k^h-od-el-e   na Ali ka tarafu-y-á
     SP-talk-T$_2$-TV to   about me
     'I talked to Ali about me.'

mwa:na in (34a) is a marked NP, being part of a prepositional phrase.
That mwa:na is not the direct object of the verb -ko:d- 'talk' is reflected
by the fact that mwa:na cannot control an OP on the verb and cannot be
passivized. (34b) illustrates the fact that a reflexive pronoun co-referential
with the subject of -ko:d- cannot be substituted for mwa:na. A marked
NP cannot be the target for reflexivization. The only thing that is
permitted is simple pronominalization, as in (34c).

    Further evidence that a marked NP cannot be the target of reflexivi-
zation is provided by the data in (35).

(35) a. Ali Ø-kod-el-e   wana:faxi ka mw-a:limu
         SP-talk-T$_2$-TV   lies   to   teacher
      'Ali told lies to the teacher.'

   b. Ali Ø-m-kod-esh-ez-e   mw-a:limu wana:faxi
         SP-OP-talk-DA-T$_2$-TV teacher   lies
      'Ali told the teacher lies.'

   c. *Ali Ø-kod-el-e   wana:faxi ka ru:hu-y-e
         SP-talk-T$_2$-TV   lies   to himself.
      'Ali told lies to himself.'

   d. Ali Ø-kod-esh-ez-e   ru:hu-y-e wana:faxi
         SP-talk-DA-T$_2$-TV himself   lies
      'Ali told himself lies.'

The expression -kod- wana:faxi 'tell lies' requires the use of the
preposition ka in front of a NP that refers to the person to whom the lies
are told. The causative form -kod-esh- wana:faxi takes a direct object
referring to the individual to whom the lies are told. In (35a)
mwa:limu is marked by the preposition ka, and (35c) shows that it is
ungrammatical to introduce a reflexive pronoun in this position. In

(35b) mwa:lumu is an unmarked NP functioning as the object of the verb -ko:d-esh- (note that mwa:limu controls the OP; furthermore, it can be passivized). From (35d) we can see that it is possible to introduce a reflexive pronoun in the position occupied by mwa:limu in (35b). The contrast between (35c) and (35d) thus clearly supports the claim that a marked NP cannot be the target of reflexivization.

In normal word order, marked NPs follow unmarked NPs. Thus it is not possible to show that a marked NP is unable to trigger the reflexivization of an unmarked NP, unless we have recourse to constructions where the marked NP is moved out of its ordinary position. We cite just one case-- namely, that shown in (36).

(36) *kake Nu:ru, m-p^{h}ik-il-il-e   ru:hu-y-é
       at Nuru's   SP-cook-DA-T$_2$-TV   himself
       *'At Nuru's place, I cooked for himself.'

(36) illustrates that the direct object of the benefactive applied verb -pik-il- 'cook for' cannot be a reflexive pronoun co-referential with a marked NP occuring in sentence-initial position. The ungrammaticality of (36) could obviously be explained in various ways. For instance, one could say that reflexivization operates prior to the rule that moves kake Nu:ru to sentence-initial position, consequently Nu:ru is not in a position to trigger reflexivization at the point where the rule operates. Or one could claim that only subjects trigger reflexivization and Nu:ru is not a subject in (36). Since there are alternative explanations, examples such as (36) are inconclusive. There are not, however, any better examples that bear upon the question, so matters will have to be left as they stand.

Let us turn now to the question of whether secondary objects--i.e. unmarked NPs that are not direct objects--can be triggers or targets of passivization. Consider (37) first of all.

(37) a. ni-m-p-el-e   Hamadi Hali:má
         SP-OP-give-T$_2$-TV
         'I gave Halima to Hamadi (e.g. father giving his daughter
          to someone in marriage).'
     b. *m-p^h-el-e   Ali ru:hu-y-á
         SP-give-T$_2$-TV   myself
         'I gave myself to Ali.'

Note: (37b) is grammatical in the sense 'I gave my soul to Ali.'
        Recall that <u>ru:hu</u> has the literal meaning 'soul'.

The verb -<u>p</u>- 'give' allows two unmarked NPs to follow. These NPs may
both refer to humans, as (37a) shows. The direct object of verbs such
as -<u>p</u>- is always the NP indirectly affected (the recipient in the present
example). This point was demonstrated earlier in the paper. Notice
that (37b) is an impossible sentence in Chimwi:ni. One cannot say things
like -<u>p</u>- <u>ru:huya</u> 'give myself (to s.o.)'. A reflexive pronoun may not
occupy the slot of the secondary object. The reflexive pronoun can only
occupy the slot of the direct object, as in (31b).

    The applied verbal construction can also be used to demonstrate that
secondary objects cannot reflexivize. Examine the data in (38).

(38) a.   Ali   Ø-m-pash-ił-e   mw-a:na <u>dawa</u>
               SP-OP-apply-T$_2$-TV   child   medicine
          'Ali applied medicine to the child.'

     b.   mw-a:na Ø-pash-ił-e   ru:hu-y-e <u>dawa</u>
               child   SP-apply-T$_2$-TV   himself   medicine
          'The child applied medicine to himself.'

     c.   Ali   Ø-m-p^{h}ak-il-il-e   mw-a:na <u>dawa</u>
               SP-OP-apply-DA-T$_2$-TV   child   medicine
          'Ali applied medicine to the child for me.'

     d.   *mw-a:na Ø-m-p^{h}ak-il-il-e ru:hu-y-e dawa
          'The child applied medicine to himself for me.'

The verb -<u>pak</u>- 'apply' permits two unmarked NPs to follow it. The recipient
of the action--<u>mwa:na</u> in (38a)--functions as the direct object of the verb.
(38b) establishes the fact that a reflexive pronoun may play the role of
the recipient; this observation conforms to the claim that direct objects
are possible targets for reflexivization. (38c) illustrates the use of
the applied verb -<u>pak-ił</u>- 'apply for'. The beneficiary NP is the direct
object of the applied verb; in (38c) the beneficiary is the first person,
indicated by the particular OP selected. (The first person marker is /ni/
underlyingly, but usually shows up as a homorganic nasal accompanied by
aspiration of a following voiceless stop.) (38d) establishes that a
reflexive pronoun may not fill the slot of the recipient of the action in
the applied verbal construction. The recipient is <u>not</u> the direct object

of the applied verb. Thus the impossibility of a reflexive pronoun as
recipient in (38d) will follow automatically if the target of reflexi-
vization is required to be a direct object.

We have given some evidence that secondary objects do not serve as
targets of reflexivization. Once again, it is difficult to show clearly
that secondary objects do not serve as triggers of reflexivization. The
normal word order of Chimwi:ni clauses is: subject - verb - direct object -
secondary object(s) - marked NP(s). Thus given that only direct objects
are targets for reflexivization, secondary NPs cannot ordinarily precede
a possible target. Thus while there is no clear-cut evidence that
secondary objects cannot serve as triggers, there is no clear-cut evidence
that they can either. The only NPs that are attested as triggers are in
fact subject NPs.

There is, however, one class of apparent counterexamples to the
proposed constraints on reflexivization in Chimwi:ni; a brief examination
of this class of sentences is in order. Note the sentences in (39).

(39) a. Ali$_i$ Ø-m-big-ish-iz-e   mw-a:na$_j$ ru:hu-y-e$_j$
           SP-OP-hit-DA-T$_2$-TV   child   himself
        'Ali made the child hit himself.'

     b. Ali$_i$ Ø-m-kaha$\underline{t}$-ish-iz-e   I:sa$_j$ ru:hu-y-e$_j$
           SP-OP-hate-DA-T$_2$-TV   himself
        'Ali made Isa hate himself.'

The sentences above are unambiguous. The reflexive pronoun refers not to
the subject of the causative verbs 'cause to hit' and 'cause to hate',
but rather to the direct object of the causative verb, mwa:na in (39a)
and I:sa in (39b). Thus these sentences appear to wildly violate the
constraints that we claimed to be operative in the language. In (39)
the trigger is a direct object of the verb and the target is a secondary
object. Compare (40) which makes the grammatical relations involved
clear.

(40) a. Ali Ø-wa-big-ish-iz-e   w-a:na   Nu:ru
              SP-OP-hit-DA-T$_2$-TV   children
        'Ali made the children hit Nu:ru.'

b. w-a:na   wa-big-ish-iz-a   Nu:ru

    children   SP-hit-DA-T_2-TV

    'The children were made to hit Nuru.'

c. *Nu:ru   Ø-big-ish-iz-a   w-a:na

Note: (40c) is ungrammatical if Nu:ru is understood as being the individual hit rather than the one made to hit someone.

It is clear that in (40a) wa:na is the direct object and Nu:ru a secondary object. wa:na controls the OP on the verb in (40a), and wa:na can be passivized, as in (40b), whereas Nu:ru cannot be passivized, as shown in (40c).
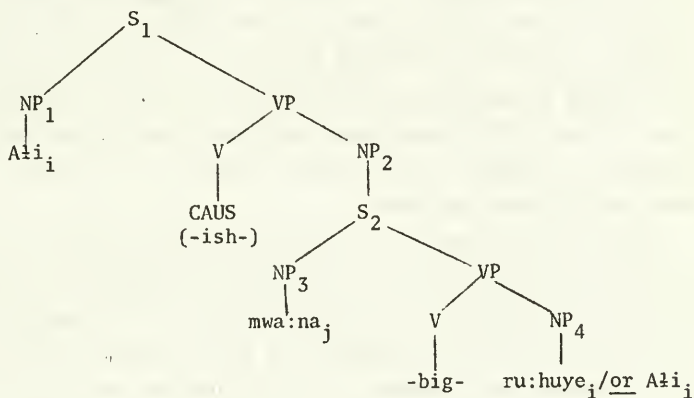
Although (39) appears to be a counterexample to our claims, it actually can be argued that these sentences support what we have said about reflexivization--provided one accepts the proposal that causative verbs be derived from a bisentential source. That is, a sentence such as (39a) would be derived from a deep structure roughly like (41) below:

(41)
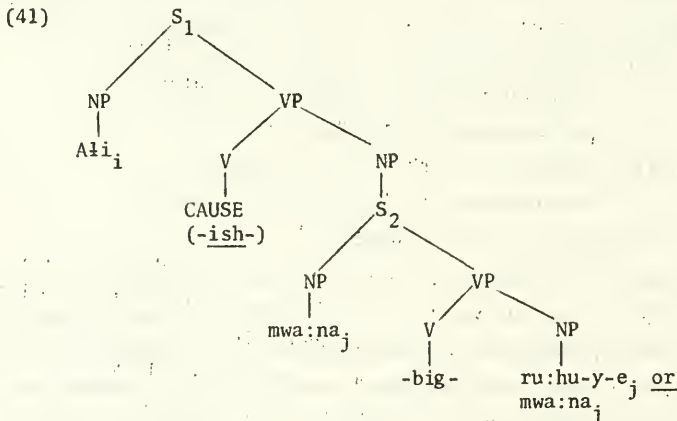
Given a configuration of this sort, a rule will be required that unites the verb of S_2 with the causative verb of S_1, producing ultimately -big-ish-. Furthermore, this merger of the verbs must result in the "union" of the two clauses into one clause, with the subject of the lower clause assuming the role of direct object of the verb -big-ish-. (Within a "clause union" approach to Chimwi:ni causatives, it would typically be the subject of the lower clause that would function as direct object of the causative verb.)

Notice now that in (41) the trigger of reflexivization is a subject and the target is a direct object. Thus the claimed conditions on reflexivization are satisfied by the structure <u>prior to</u> clause union. As long as reflexivization is permitted to apply to such pre-clause union structures, the conditions on reflexivization proposed here can be maintained. Furthermore, we can explain why (39a) <u>cannot</u> mean 'Ali$_i$ made the child$_j$ hit himself$_i$'. To obtain such a meaning, we would have to have a deep structure such as (42).

(42)

```
                         S₁
                    /         \
              NP₁              VP
               |            /      \
              Ali_i        V        NP₂
                           |         |
                          CAUS       S₂
                         (-ish-)   /     \
                              NP₃          VP
                               |         /    \
                            mwa:na_j     V      NP₄
                                         |       |
                                       -big-   ru:huye_i/or Ali_i
```

At this level of structure, the conditions for reflexivization are not satisfied. We do not have two co-referential NPs within the same clause. Clause union will join the verb of the lower clause to the causative element of the higher clause. As a consequence, <u>mwa:na</u> will become the direct object of the derived causative verb and NP$_4$ (<u>ru:huye</u> or <u>Ali</u>, depending on how one derives reflexive pronouns) will assume the position of a secondary object of the causative verb. Once again the conditions for reflexivization are not satisfied, since the target (NP$_4$) is not a direct object. Consequently, reflexivization is (correctly) blocked.

The apparent violations of the conditions for reflexivization in causative constructions can be even more extreme, as the data in (43) show.

(43) a. Ali ∅-m-laŋgal-ish-iłiz-e Mu:sa mw-a:na ru:hu-y-e
          SP-OP-look-DA-DA-TV   child   himself
       'Ali made the child$_i$ look at himself$_i$ on Musa.'

b. Ali Ø-m-kaha<u>t</u>-ish-i<u>l</u>iz-e I:sa mw-a:na ru:hu-y-e
        SP-OP-hate-DA-DA-TV   child   himself
    'Ali made the child$_i$ hate himself$_i$ on Musa.'

The examples in (43) involve the applied form of the causative verb.
The direct object of this particular verbal construction is (as was shown
at the beginning of the paper) the beneficiary NP: <u>Mu:sa</u> in (43a) and
<u>I:sa</u> in (43b). The remaining post-verbal NPs are secondary objects.
Notice that both <u>mwa:na</u> (the trigger) and <u>ru:huye</u> (the target) are
secondary objects in (43). This is true, however, only of the surface
structure. If the bisentential analysis of causatives is accepted, then
<u>mwa:na</u> would be the subject of the lower clause and <u>ru:huye</u> the direct
object. Thus (43) is consistent with the proposed restrictions on reflexi-
vization, provided reflexivization is sensitive to the pre-clause union
structure of causative verbs.

What we have seen, then, is that the clause union analysis of
causative verbs will allow us to explain the only cases known to us where
the proposed conditions on reflexivization are not (apparently) satisfied.
That these cases can be accounted for in an elegant fashion lends support
to the proposed restrictions on reflexivization, and also gives some
support to the clause union analysis of causatives itself.

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AUTHENTICITY AND THE CHOICE OF A NATIONAL LANGUAGE
THE CASE OF ZAIRE*

Eyamba G. Bokamba

0. Introduction

Sociolinguists and other social scientists generally agree that
language is the major medium of social communication between sub-
systems as well as the medium for expressing values, cultural heritage,
and national identity (cf. Haugen, 1966, 1968; Fishman, 1968, 1972;
Rustow, 1968). As such, language serves as one of the most
important integrating forces within a political system. The Republic
of Zaire (formerly the Democratic Republic of the Congo), like most of
the Sub-Saharan African states, has no indigenous language of
"national integration"; to achieve this end, however, the country
has adopted French as the official language.[1]

This paper will be concerned with what is likely to become one
of Zaire's most burning issues within the next ten years: the choice
of a national language. It is argued here, first, that the use of
French as the official language and the medium of instruction in all
levels of formal education[2] is incompatible with the objective
realities of language use in Zaire, and contrary to the philosophy of
authenticity espoused by the country. In the course of this discussion
it is shown that French, compared to either Lingala or Swahili, is
the monopoly of a small ruling Zairian elite and cannot, therefore,
constitute the language of national development consonant with the
philosophy of recourse to authenticity. Second, it is argued that
the adoption of one of Zaire's two dominant languages: Lingala and
Swahili, as a national language would be highly conducive to national
integration and real educational development. Finally, a general
language policy is proposed, and practical methods for its implemen-
tation are outlined.

1.0 Authenticity and its Raisons d'Etre

Since the arguments to be presented below depend in important
respects on the socio-political philosophy of authenticity, it is
necessary for us to briefly discuss its origin and current application
in the Republic of Zaire in order to better situate our presentation.

1.1 _Origin of Authenticity in Zaire_. The exact date on which the philosophy of authenticity first appeared on the Zairian political scene remains a matter of dispute. There is strong indication, however, that its genesis can be dated to a conclave of Congolese leaders held at the town of N'Sele (located at 75 kilometers from Kinshasa) between May 2-5, 1967. One of the major objectives of that meeting was to review the social, political, and economic situation of the nation following the two successive civil wars[3], and take appropriate measures for its reconstruction. During that conclave, the Congolese leaders, headed by President Mobutu Sese Seko Kuku Ngbendu Waza Banga, decided to found the "Mouvement Populaire de la Revolution" (MPR) and establish it as the state's sole and ruling political party. The proceedings of that meeting were subsequently published on May 19, 1967, as the Manifesto of N'Sele (Le Manifeste de la N'Sele).

This document sets forth the MPR's guiding principles and theoretical foundations, and outlines three main objectives for the ruling party: (1) re-establishment of the national government's authority throughout the country and winning the respect of foreign powers; (2) achievement of economic independence, financial stability, and social development; and (3) the promotion of the well-being of every citizen through a program of social justice with particular emphasis on the upgrading of labor and labor force (Manifeste, 5; Dubois, 1973). All three objectives, according to a written speech attributed to the late Minister of Foreign Affairs and Director of the Political Bureau of the MPR, Citizen Mandrandelle Tanzi, were to be attained through the vigorous application of a policy of "authentic nationalism" (Kangafu-Kutumbagana, 1973).

Even though no explicit mention is made of the term authenticity in the N'Sele Manifesto proper, the definition of this concept given by President Mobutu at his United Nations General Assembly speech on October 4, 1973, closely parallels the last paragraph of the preamble of the N'Sele Manifesto[4]. According to President Mobutu, recourse to authenticity is:

(1) ...une prise de conscience du peuple zairois de recourir à ses
     sources propres, de chercher les valeurs de ses ancêtres afin d'en
     apprécier celles qui contribuent à son développement harmonieux et
     naturel. C'est le refus du peuple zairois d'épouser aveuglement
     les idéologies importées. C'est l'affirmation de l'homme zairois
     ou de l'homme tout court, là où il est, tel qu'il est avec ses
     structures mentales et sociales propres. Le recours a l'authen-
     ticité n'est pas un nationalisme étroit, un retour aveugle au passé,
     mais il est, au contraire, un instrument de paix entre les nations,
     une condition d'existence entre les peuples, une plate-forme pour
     la coopération entre les états. Car, l'authenticité est non seule-
     ment une connaissance approfondie de sa propre culture, mais aussi
     un respect du patrimoine culturel d'autrui (Discours, 1973:2)[5].

    Whatever may have been the exact origin of authenticity as a polit-

ical philosophy is not as important here as the fact that this concept

has been so eagerly embraced by most of the Zairian people. The question

that arises at this point is why this should be the case. That is, why

is authenticity so popular among Zairians, and what led the Congolese

leaders to propound it as a socio-political doctrine in 1967? The

answer to these questions will show that even though authenticity has

acquired rather new and doctrinary dimensions only during President

Mobutu's administration, the concept itself is not new in the Zairian

political history.

    1.2 Raisons d'être of authenticity. The reasons underlying the

great appear of authenticity, as Kangafu-Kutumbagana (1973) and Dubois

(1973) correctly observe, are not difficult to find. Of the various

reasons that can be cited in this respect, at least four of them can be

singled out as basic. First, unlike other philosophical concepts,

authenticity is neither esoteric nor abstruse, but immediate, relevant,

and practical in that it offers something to everyone (Dubois, 1973).

For the intellectual, authenticity is a foundation for a new sense of

pride in himself, his people, and in their history and artistic accomp-

lishments (Kangafu-Kutumbagana, 1973; Dubois, 1973). For the common

man, it provides not only a frame of reference, but also a philosophical

context within which he can identify in that through authenticity he

can relate to the cultural heritage of which he is inextricably a part.

Further, it can provide him the needed equilibrium as he faces the

contemporary culture which creeps more and more into his daily life.

Second, authenticity provides all Zairians with a new system of thought which permits a complete reexamination and a "gratifying reappraisal" of the multiple facets of their lives which colonialists and Christan missionaries had condemned out of hand (Brausch, 1961; Anstey, 1966) and which Zairians themselves had discarded as a result of a feeling of inferiority complex and shame (Mabika-Kalanda, 1965; Kangafu-Kutumbagana, 1973; Dubois, 1973). The fact that African culture in general was considered barbaric by both colonialists and missionaries, while at the same time European museums (e.g. Tervuren) were hoarding precious African artistic crafts, is well known and needs no further comment in this paper (cf. Osei, 1968; Williams, 1974). Third, authenticity is a concept that can be applied to many things and serve various purposes. For instance, it can be used to justify a government's policy such as the Zairianization of retail businesses in 1974 and the change of "Christian" names (cf. section 1.2)[6]; or it can be used to explain a nation's characteristics.

The fourth and final basic reason for the great appeal of authenticity in Zaire is that Zaire needed in 1967, and needs today, a rallying cry for uniting the most dynamic elements of the country in the difficult tast of nation-building. This is particularly so in view of the mental alienation or "déracinement" which Zairians were subjected to for some eighty years of colonialism and brainwashing (cf. Mabika-Kalanda, 1965), and in view of the first five years of chaotic independence that they experienced before the ascendance of President Mobutu to power. Put differently, Zaire needed in the 1960's a force that could counterbalance the forces of ethnicity, cultural alienation, and regionalism which seriously, among other forces, threatened the territorial integrity of the nation during its first five years of political freedom. The philosophy of return to authenticity turned out to be that force.

These four basic reasons, which indicate important concerns for the harmonious development of what is today the Republic of Zaire, have been dealt with by the nation's elite at least since the 1950's. The late Prime Minister P.E. Lumumba first discussed these problems in a speech delivered at the Pan-African Congress held in December, 1958, at Accra, Ghana. From that time on until his assassination on

January 17, 1961, he never failed to emphasize the importance of pride
in Congolese and African cultural heritage, as well as the necessity
for national unity in the Congo. Lumumba's book (1961) and speeches
edited by Jean Van Lierde (1963) address themselves, among other things,
to these basic issues. The second Congolese known to us to have
addressed himself to these problems before the ascendance of President
Mobutu to power was Mabika-Kalanda in his aptly entitled book, La Remise
en Question: Base de la Décolonisation Mentale (1965).

Mabika-Kalanda's thesis was basically that in order for the Congo to
make · genuine progress in all spheres of development, the Congolese
people, especially the elite, must define themselves vis-à-vis the
external world by a critical reappraisal of their cultural heritage and
that of the outside world. This critical evaluation involves not only
the rejection of many blindly imported western ideas in the areas of
education, socio-cultural relations, and economic development, but also
the repudiation of certain Congolese and African cultural concepts which
are incompatible with today's world progress. This is essentially the
thesis picked up by President Mobutu eight years later. Similar concerns,
even though less forceful and detailed in content than Mabika-Kalanda's,
were expressed by the "Union Générale des Etudiants Congolais (UGEC)" at
their first congress held in Kinshasa in May 1961 when they demanded
that the national government develop a national culture via the organ-
ization of cultural events. Thus even though no other Congolese before
1967 ever used or viewed authenticity as a political doctrine, the
perception of the problems which led the Mobutu administration to propose
this concept and give it doctrinary dimensions was shared by other
Congolese intellectuals. This fact constitutes one of the major under-
lying reasons for the popularity of authenticity.

1.3 Application of Authenticity. Once the MPR and President
Mobutu decided that the country had to rid itself of all vestiges of
the colonial past and restore to the Zairian people a sense of pride
in their own cultural heritage through a program of Authentic Nation-
alism, vast horizons opened up for its application throughout the entire
nation. Most of the changes which occurred as a result of the authen-
ticity campaign were expected, because they were a continuation of

changes that had been taking place since the beginning of 1966, i.e. a year before the official birth of authenticity. For example, in May 1966, most of the major cities in the country which were re-baptized by the Belgian colonialists regained their traditional names. The capital city, which had been renamed Léopoldville in the late 1920's in honor of King Leopold II of Belgium, regained its traditional name of Kinshasa; Elisabethville became Lubumbashi; Stanley-ville became Kisangani; Coquil-hatville became Mbandaka; Luluabourg became Kananga, etc.[7] Names of streets, parks, mountains, and river falls bestowed by Belgians in honor of their European predessors or leaders were also changed accordingly. Monuments built in honor of colonialists were also dismantled one after another. Similar changes embraced part of the economic structure. For instance, all major companies operating in the country in 1966 were required to have their headquarters in Kinshasa; and others, such as the giant Union Miniere du Haut Katanga and its subsidiaries, were national-ized. These changes were not only expected by the population, but they were also highly welcomed.

The only changes that were unexpected and seemed to have been received lukewarmly by the population occurred in 1971. There were at least three major changes during this period. The first change came on January 4, 1971, when the National Parliament passed a law making the MPR (Mouvement Populaire de la Révolution) the nation's highest political authority exceeding the Presidency, the Government, the Parliament itself, and the Supreme Court. What this meant was that whatever decision the MPR took through its political bureau had force of law, thus making the National Parliament a rubber stamp. The second change occurred on August 6, 1971, when the Government, following a conference with the national professors for higher education, abolished the three universities of the Congo, viz. Louvanium (at Kinshasa), the State University of the Congo (Lubumbashi), and the Free University of the Congo (Kisangani), as separate institutions and placed them under a single administrative umbrella as the "Université Nationale du Zaire" with three campuses. The third major change in 1971 occurred on October 21, when the political bureau of the MPR announced that the country would no longer be called the Democratic Republic of the Congo or Congo-Kinshasa, but as the Republic of Zaire.[8] A number of other changes took place in the country

after 1971, but those outlined here are the most tangible results of
the authenticity campaign.

2.0 Authenticity and the Choice of a National Language

Ironically, while the Republic of Zaire under the leadership of
President Mobutu Sese Seko has successfully dismantled one colonial
monument after another, and has attempted to efface other vestiges of
the colonial past, it has left one important monument thus far
untouched, viz. French. French is used as the official language of
the country and the medium of instruction in all levels of formal
education. Clearly, this language policy is contrary to the philosophy
of authenticity as defined in (1) and discussed above in so far as it
denies Zairians the opportunity for self-expression. In other words,
given the fact that language is the medium of transmitting a people's
culture and of expressing national identity, how can a foreign
language such as French be used to reveal the wealth of political,
economic and social ideas and values of Zaire's past? To express one's
culture in borrowed terms is not only unauthentic, but also amounts
to cultural bankruptcy. How does one explain this blattant inconsis-
tency in the application of the philosophy of authenticity, especially
in view of the fact that President Mobutu, like his predecessor, the
late P.E. Lumumba, is fully aware of the cultural role of a language?

The answers to these questions lie partly in certain myths about
the eminence and popularity of French in Zaire as elsewhere in the
so-called francophone Africa, and partly in the socio-political
problems associated with the selection of a national language in any
multilingual society. We consider these aspects of the problem
immediately, beginning with the question of myths.

2.1 Myths About the Importance of French. The importance and
superiority of French as the medium of education in francophone Africa,
like that of English in anglophone Africa, has been exaggerated for so
long that many African leaders have come to accept these exaggerations
as God's truth. President Mobutu, for instance, was reported by the
press to have stated, during an official visit in Paris, at a reception
organized in his honor by the late President Pompidou, that Zaire

(whose estimated population was 24,000,000 at that time) is the second largest francophone country in the world after France. While such a statement, if it was in fact made by the President, cannot be taken as an accurate reflection of what most educated Zairians believe about the popularity of French in Zaire, it is nonetheless indicative of the existence of a big myth about the use of this language in the country. This myth is in part attributable to the subcategorization of Africa by colonialists and political scientists into three major inter-regional linguistic groupings: (1) Anglophone or English-speaking Africa, (2) Francophone or French-speaking Africa, and (3) Portuguese-speaking Africa.

These terms, which appear to have been introduced in the political literature in the early 1960's as convenient and polite terms for what used to be referred to as "British Africa", "French and Belgian Africa", and "Portuguese Africa" in pre-independent Africa, are highly deceptive for linguists and socilinguists considering that they do not reflect the objective realities of the use of the said languages in the designated areas.[9] As Alexandre (1971) correctly observed, it is probable that more than 90 percent of today's Africans have no command whatsoever of either French or English. The same observation applies to Portuguese in the former Portuguese colonies. For the Republic of Zaire, one can say with very little hesitation that less than 10 percent of the population is conversant in French considering that its use as the medium of instruction in all levels of formal education dates as recently as 1958.[10] The segment of the Zairian population that has a good command of French corresponds almost exactly to the number of high state "Fonctionnaires" and/or secondary school graduates, and university graduates.[11] The total population of these groups cannot exceed 10 percent of the country's adult population by any estimate; this being the case, we are left with 90 percent of the population non-conversant and illiterate in French.

The second myth is that French is the language of culture and civilization; thus if one wishes to be considered educated and cultured, one must not only know French but he must also speak it correctly, preferably with a Parisian accent. This myth is taken so

seriously that many Zairian teachers educated in non-French speaking
countries of Europe and the Americas find themselves frustrated when
their students pay less attention to their lectures because of mistakes
they make in class or because of their "funny" French accent.[12] Upper
class secondary school students, especially those in the last three
years, and university students in Zaire judge an instructor's ability
and level of education not in terms of his knowledge of the subject
matter, but rather in terms of his command of French. This appears to
be also the case in other francophone African states.

The observation below quoted by Fishman (1971: 37-38) from a
Dar-es Salaam mewspaper (The Nationalist, 20 December, 1968) reflects
what a number of other researchers (cf. Birnie and Ansre, eds., 1968;
Gbedemah, 1971; and Gorman, 1974) have found to be a common attitude
among educated anglophone Africans vis à vis English:

(2) There are leaders and bureaucaats who still look upon the
     English way of life as a superior culture, and, therefore
     English as the language of 'culture'. They seize every oppor-
     tunity to speak English and flaunt their knowledge of English
     before peasants and workers in the fields and offices. Some
     of them will even proudly assert that they can only think in
     English!! This is one manifestation of cultural bankruptcy...
     [Others] who know little English nevertheless speak English after
     the manner of expatriate Englishmen. They do so because they
     subconsciously wish they were Englishmen.

That such an attitude on the part of the African elite is uncalled for
and detrimental to authentic educational and cultural developments
needs no further comment here. The point that should be made here is
that the elite of a country like Zaire, which is currently experimenting
with a very interesting approach to socio-cultural development, cannot
maintain the type of attitude just described and yet make a serious
commitment to the philosophy of return to authenticity.

Finally, the other myth which accounts in part for the continu-
ation of French as the official language and medium of instruction in
Zaire is that formal education is thought to be possible only in an
international language such as English, French, German, Portunguese,
Russian, and Spanish. The argument that perpetuates this mediaevalian
attitude is what sociolinguists refer to as the "Languages of Wider
Communication" argument (cf. Fishman, 1971). Specifically, in

addition to the unifying and expressive functions of language that I
have alluded to in the previous section, language is viewed as performing
two other important functions, viz. communicative and participatory.
A language is said to adequately serve the communicative function if and
only if it is "modernized". Language modernization, according to
Ferguson (1968), is measured in terms of

(3) ...the development of intertranslatability with other languages
in a range of topics and forms of discourse characteristics of
industrialized, secularized, structurally differentiated, `modern`
societies.

In other words, the process of modernization may be thought of as
consisting of two aspects: (a) the expansion of the lexicon or vocab-
ulary of the language by new words and expressions, and (b) the develop-
ment of new styles and forms of discourse as to enable the language to
become the equal of other developed languages as a medium of national
and international communication. Modernization alone, it is generally
argued, is not enough; a language must also allow its speakers to
participate in and learn about scholarly developments that are taking
place elsewhere in the world. It is partly because of this reason that
countries which have highly developed languages, in the Ferguson (1968)
sense, find it necessary to teach other international languages in
their schools. We shall return to this point and question Ferguson's
definition in section (2.2).

Thus the argument of those (former colonialists as well as some
educated Zairians) who have opposed the use of Zairian vernaculars in
education in preference for the retention of French in this domain is
that Zaire, just like many other Sub-Saharan African states, does not
have any well-developed language(s) of wider communication that can
adequately serve the communicative and participatory functions discussed
above. This being the case, the argument goes, a language policy that
calls for the use of vernaculars in education will impede the progress
and the integration of Zairian people into the modern world. The same
argument has been used in other francophone African states, and in
anglophone states with respect to the use of English as a medium of
instruction (cf. Unesco, 1953a, 1953b; Lewis, 1962; Alexandre, 1971;
Spencer, 1971; and Gorman, 1974).

2.2 <u>Nationalism and Language Planning</u>. While it is undeniable
that Zairian languages, as many other African languages, have yet to
elaborate the kind of vocabulary that will permit the expression of certain
concepts, technical and otherwise, the argument that these languages cannot
adequately serve the communicative function is linguistically unfounded.
The conclusion that French must, therefore, serve both as the medium
of instruction and the official language of the country is equally
unwarranted for the same reasons. And that is, first, the development
of a language via the expansion of its lexicon and idiomatic expressions
as well as the acquisition of new styles of discourse as to enable it
to become an effective medium of national and international communication
is directly proportional to the demands placed on it by its speakers.
There is no natural language, to our knowledge, which has failed to
adequately serve the communicative function of its speakers. This is
because speakers of languages borrow needed vocabulary from other
languages and/or coin new terms from existing ones.

Second, the fact that a nation has a national languages which is
so-called underdeveloped or less extensive in its lexicon compared to
international languages like English, French, and Russian, does not
necessarily mean that such a nation will be isolated from developments
occurring elsewhere in the world even if this language is the only one
used as the medium of formal education. The fact of the matter is that
a nation may have an indigenous national language which serves as the
medium of instruction and internal governmental transactions, and also
use a second language for international affairs. This language and
other international languages, as will be proposed in section (3.0),
can be taught as subjects in the school system. Thus arguments
against the adoption of a Zairian national language which are based
on a Fergusonian view of language development have no validity
whatsoever.[13]

Regardless of how one wishes to view language development or
modernization, language planning, just like authenticity, has always
been one of the universally recurring components of nationalism
(cf. Fishman, 1972). As fishman (1972:44-55) points out, the view
that a people's individuality resides in its language does not only

date as far back as Biblical times when it was regarded as one of the
components of the holy trinity (holy people, holy land, holy language),
but language has also been viewed as the factor which provides a link
with a people's glorious past and authenticity. While a people's past
can be arrived at via an examination of their history, the essence of
a nationality of such a people cannot. And this is because, to quote
Fishman (1972: 46),

(4)   This essence exists over and above dynasties and centuries and
      boundaries; this essence is that which constitutes the heart of
      the nationality and which leads to its greatness; the essence of
      a nationality is its spirit, its individuality, its soul. This
      soul* is not only reflected and protected by the mother tongue
      but, in a sense, the mother tongue is itself an aspect of the
      soul, a part of the soul, if not the soul made manifest.

       In view of Zaire's approach to nationalism, which is not different
in kind from previous cases of nationalism, one would expect that the
emphasis on authenticity would not only make it difficult for French to
be maintained as the official language and medium of formal education,
but also that it would facilitate the selection of a national language.
The change in language policy is even urgently called for in the
educational domain, as we shall demonstrate in section (2.4). However,
as of today, no language policy calling for the use of the four
Zairian linguae francae (Kikongo, Lingala, Swahili and Tshiluba) as
the media of education, or the adoption of one of them as the national
language has not been implemented. The question that naturally arises
at this point is, why has not the Zairian Government done this? The
answer to this question lies, in addition to what we have termed myths
about the importance of French, in the complexity of the language
situation in Zaire and the difficulties inherent in the selection of
a nation-wide language in a multi-lingual society.

       2.3 The Language Situation in Zaire. The first difficulty that
a language policy-maker will encounter in Zaire is the multiplicity of
the so-called "national languages". In addition to several other major
and minor languages that are spoken in Zaire, the following: (1) Lingala,
(2) Swahili, (3) Tshiluba, and (4) Kikongo, have been recognized since
colonial times as national languages for certain governmental functions
such as elementary education (kindergarted to third grade), proceedings

of the lower courts of justice, radio and TV broadcasting, and local
government (township and village levels) administration. Their distri-
bution in the six original Provinces of Zaire and the federal district
of Kinshasa is, according to Bokula[14], as in Table I, where an "x"
means that the language is widely and commonly spoken in the region.

Table I: Zairian National Languages

Province	Lingala	Swahili	Tshiluba	Kikongo
Kinshasa	x			x
Bakongo (Bandundu)				x
Equateur	x			
Orientale	x	x		
Kasai			x	
Kivu		x		
Katanga		x	x	

Each of these four languages originated from one province or a region
that may include two co-terminous provinces. Lingala originated from
the Equateur province; Swahili entered the country from the East African
coast via the Oriental and Kivu provinces as a result of commercial
intercourse with the inhabitants of East Africa; Tshiluba originated in
the Kasai and Katanga provinces; and Kikongo from the former province of
Leopoldville, which originally included the capital city but is now
divided into two new provinces: Bas Zaire and Bandundu. As can be seen
from Table I, of these four national languages only Lingala and Swahili
are spoken outside of their regions of origin. As a result of this distri-
bution, Tshiluba and Kikongo have come to be identified as ethnic
languages; thus if the choice for a national language were to be made
today, Lingala and Swahili would be, from a purely distributional basis,
the only candidates. What Table I does not show, however, is the fact
that Lingala is much more widely spoken and that its influence throughout
the country is unparalleled as will be discussed momentarily.

2.4 Some Practical Considerations. But the choice of a national
language for the purposes of education and governmental transactions, as
anyone who has dealt with this problem will readily admit, is not so

simple. There are several factors and practical problems that must be seriously considered before a final decision can be made on what language to elevate to the national level; some of these problems are of socio-political order, emotional, others are economic. Put differently, the choice of a national language in a multilingual society will have social, political and economic implications. A sound language policy must, therefore, take all of these factors into consideration.

From the socio-political point of view, the first factor that a language planner or policy maker must consider is "language attitude". In developing a language policy for a multilingual society such as Zaire, where a colonial language, French, has official status and four indigenous languages have semi-official status in both education and governmental services, there are two questions that must be asked in this respect. The first question is, does the population wish to elevate one of its own languages as a national language? Second, if it does, which one of the four languages mentioned above should be accorded this national status? Both of these questions are important because unless the population is prepared to undertake this task, an imposed decision on the part of the ruling class will last only as long as that class is in power. Further, if the population does not consent to the choice of the national language made by the government, the implementation of the policy will be rendered very difficult, if not doomed from the start.

The people of Zaire, however, have in part answered both of the above questions; and have thus simplified the initial task of the language policy-maker. Specifically, since the early days of the Zairian political independence there appears to be a general consensus, judging from the speeches and writing of many Zairian intellectuals (cf. Van Lierde, ed., 1963; Kahombo-Mateene, 1967; Kajiga, 1967, 1968; Dokula, 1970; Mutanda, 1971; Kashamura, 1971a,b), that the Zairian leaders wish to replace French as the official language and medium of instruction of the country by one of their own languages. The first indication for the dispensability of French as the official language of what is today the Republic of Zaire came from the late Prime Minister P.E. Lumumba in a public speech made in Kisangani (formerly Stanleyville) on July 19, 1967, when he said, in reference to the africanization of the army, that:

(5) And the one who is appointed today chief commissioner or commander of the 'Force Publique', even if he does not know French, <u>he will speak in Swahili or Lingala: we have our own national Flemish</u> (Van Lierde, 1963: 246)-- emphasis added: EGB).

Lumumba himself often addressed mass-rallies in Lingala and Swahili during his tenure of office as Premier Minister.

The second indication and first explicit call for the replacement of French by a national language came from the UGEC (General Union of Congolese Students) during their second annual congress held in Kinshasa in 1962. The students demanded not only that the national government commission a group of educational and linguistic experts to study and propose a Congolese national language that should be taught in all the secondary schools of the Republic, but they also proposed that this language be given the same weight as the teaching of French in both elementary and secondary schools. Two years later, on June 20, 1966, the powerful Catholic diocese of Kinshasa overwhelmingly approved the recommendation of its archbishop making Lingala the language of the diocese and a requirement in the training of its clergy-men.[15] The same year the third national conference of the national direc-tors of education held in Kinshasa from the 22nd through the 28th of August adopted a resolution calling for the selection and establishment of a nation-al Congolese language which should serve as the medium of instruction for the entire nation, and the teaching of the major Congolese languages in the school system (Kajiga, 1967; Bokula, 1970).

It was against this background of interest in the national language question that the linguists of the National University of Zaire (UNAZA), with President Mobutu's support, convened at the Lubumbashi Campus between May 22-26, 1974, to study and propose a general language policy to the Zairian Government. This conference, which was the first of its kind in independent Zaire and which resulted in the foundation of the National Society of Zairian Linguists, adopted several resolutions (that will be dis-cussed in section (3.0)) concerning the promotion and teaching of Zairian languages in the school system. The conference, however, stopped short of proposing a specific national language on the grounds that the matter had not been adequately studied to permit a judicious choice at that time (Faik-Nzuji, 1974). The five instances of manifest interest in the national lan-guage issue discussed here are only a few of the known examples that demon-strate the extent to which the people of Zaire and their national leaders

have been concerned with the promotion of one of their languages to
the status of national language.

Having thus answered the first question on language attitude, let
us now consider the second question raised above, viz., how do we choose
a national language in a situation such as that of Zaire where two
languages, Lingala and Swahili, appear to have the same distribution in
the country? The answer to this question depends on at least three
important factors: (1) the actual percentage of the population speaking
each language (2) the easiness with which one language can be adopted
over another or adoptability of a language; and (3) the socio-political
benefits to be accrued to the population. These factors may be considered
as part of the prerequisites for a sound language policy formulation.

Specifically, what the first prerequisite means is that the decision
on which language to elevate to the national level must be based in part
on the extent to which the segment of the population speaking one
language actually exceeds that of the other. The only way to get this
information is to take a language census in spite of the inherent
problems that such census have (cf. Kachru, 1975). As of today, there
are no statistics on any of the four major Zairian languages apart from
some impressionistic estimates which tend to favor Lingala over Swahili
(Bokula, 1970). In the absence of such documented statistics, therefore,
the first prerequisite must be to survey these languages. This may be
one of the reasons why the UNAZA conference at Lubumbashi refrained from
proposing one of the two languages above as a national language.

The second prerequisite refers to four important factors: (1) the
availability of trained cadres that can be used in teaching and modern-
izing the selected national language; (2) the availability of teaching
materials which will facilitate the initial implementation of the
language; (3) the extent to which the language is considered to be
established as a lingua franca; and (4) the degree of possible antagonism
or resistance that might be generated vis-à-vis this language. That is,
the adoptability of a language is a particularly important, if not the
most important, prerequisite in that it has both socio-political and
budgetary implications. For instance, the question of language attitude,
as Haugen (1966) and Das Gupta (1970) have argued in the cases of

Norway and India, respectively, can determine the success of a language policy. If a significant portion of the population is resistent towards the language that is selected to become the national language, the language policy will eventually fail.

Unfortunately, as stated previously, no language attitude surveys exist in Zaire today to permit an evaluation of the prospects for the adoptability of Swahili or Lingala. But if one were to take the various pronouncements in the literature (cf. Kahombo-Mateene, 1967; Kajiga, 1967; Bwantsa-Kafungu, 1970, Bokula, 1970; Mutanda, 1971; Kashamura, 1971a, b) on this matter and the language regulations of certain institutions in Zaire today as a fair indication of the adoptability of these two languages, Lingala appears to be the most probable future national language, as Table II suggests.

Table II: Adoptability of Lingala and Swahili in Zaire

Criteria		Lingala	Swahili
1.	Availability of teachers	+	+
2.	Abundant written literature	-	+
3.	Lingua Franca status over Zaire (assumed)	+	-
4.	Official language of armed forces	+	-
5.	Language of modern Zairian music	+	-
6.	Language of social mobility in Zaire	+	-
7.	Required language of the Diocese of Kinshasa	+	-
8.	Authentically Zairian language	+	-
9.	Central & Eastern African lingua franca	-	+
10.	Language of the Capital city	+	-

That is, except for criteria (2) and (9), Lingala excels in all others over Swahili. While this language has a long established tradition of written literature and many related teaching aids that can be immediately adapted in the Zairian school system[15], Lingala has been the dominant language of the Capital city, Kinshasa, and of the armed forces since 1929. Its expansion into the country initially followed the mobility of the army and then the national police force in the sixties, so that wherever the armed force went they introduced Lingala. In addition to this, the expansion of Lingala has been largely aided by the "Congolese"

(including Congo-Brazzaville) modern music and the Zairian leadership.
Over 70 percent of the Congolese popular music is recorded in Lingala, and
many children and adults who love these songs memorize the words often
without knowing their meanings. And since music has been a major source
of recreation in Zaire, as in many other African countries, Lingala has
had an unparalleled influence throughout Zaire, Congo-Brazzaville, and
surrounding African states for a long time. Over and above all this,
the fact that the top leadership in Zaire since independence has been
controlled by Bangala, except for the late President Kasa-Vubu, has made
of Lingala a language of social and economic mobility; and has, therefore,
increased its participatory function.

Whether the facts given in Table II are an accurate reflection of
the adoptability of Lingala and Swahili or not, i.e. ones which may turn
out to be correct if a general language census were to be taken today,
is quite another matter. These facts should only be taken as suggesting
the most likely course of action were a decision to be taken today on
this issue without recourse to a language survey. The chances for the
adaoption of Lingala as a national language have been increased by the
present regime's espousal of the philosophy of authenticity. That is,
because Lingala, but not Swahili, is originally a "Congolese" language,
its chances for adoption are far greater than those of Swahili (cf.
Kahombo-Mateene, 1967; Bokula, 1970). But from a purely budgetary
aspect, it appears that the country would spend more money on developing
suitable teaching materials for Lingala than for Swahili.[16] There is
another advantage in the adoption of Swahili as the national language
of Zaire: Swahili, besides being the national language of Kenya and
Tanzania, is the most widely spoken ligua franca in the Central and
Eastern Africa region. The adoption of Swahili would bring Zaire ling-
uistically closer to and strengthen its economic and political ties with
the nations of East Africa.

As for the third consideration on Language attitude, namely the
possible benefits to be accrued to the Zairian people were they to replacce
French by a national language, one can say without hesitation that the
benefits would be enormous. The advantages to be derived from such a
language policy greatly outweigh any initial disadvantages that the
implementation of the policy might have.

2.5 <u>The Case for a National Language in Education</u>. From the educa-
tional point of view, the instauration of a Zairian national language would
extend the privileges of education from the elitest few to the masses.
The Republic of Zaire, like many other African states, considers education
a top priority as reflected in the percentage of the national budget alloc-
ated to this field. The percentage of the Gross Domestic Product (GDP)
allocated to education in 1959, a year before the political independence
of Zaire, was merely 3.9 percent. In the 1967-68 fiscal year, however, the
percentage of the GDP devoted to education raised to 21.25 percent and
then to 29 percent in 1969 (Rideout, et al., 1969). This increase
continued so that during the 1970-71 fiscal year, according to a public
speech given by President Mobutu, 35 percent of the GDP was allocated to
education. A large part of the educational budget is generally earmarked
for staff salaries, with the largest part going to expatriates on whom
Zaire continues to depend for over two-thirds of its post-secondary
education.

The returns for the Zairian tax-payers, however, are disproportion-
ately incommensurable to the expenditures. Rideout, Young, et al. in
their recent survey of education in Zaire (1969), report that the rate of
failure and wastage of students in the Zairian school system is shockingly
high. For instance, the survey states that between 1962 and 1968 academic
years 74 percent of all the entrants into the primary school system in
the country failed to complete their elementary school training. And
of those 26 percent who managed to complete, only 38 percent entered
the secondary school cycle; this yields a wastage rate of 62 percent
of the primary school graduates. This attrition rate becomes alarmingly
high in the secondary school system. Rideout, Young, et al. (1969)
report that according to official figures obtained from the Ministry of
Education for the academic years 1961-62 and 1966-67, which are taken
to be representative of the school performance, only 9 percent of the
entrants obtained their secondary school diplomas. The wastage rate in
this cycle of education generally varies between 90 to 94 percent
(Rideout, Young, et al., 1969).

And as one might expect at this point, of the 9 or less percent of
these secondary school graduates, less than 2 percent reach the univer-
sity. Once the students are at the university, their chances for

graduating with a degree are equally as slim as in the secondary school.
A few figures here from certain critical fields of study in Zaire will
suffice to illustrate this point. According to Rideout, Young, et al.
(1969), from 1961 to 1968 the State University of the Congo (Université
Officielle du Congo), which is now UNAZA-Lubumbashi Campus, failed 75
percent of its entrants in the School of Medecine; and 89.5 percent of
those in pharmacy and agriculture in 1963-69. A similar output is
reported for Lovanium (now UNAZA-Kinshasa Campus) for the same period
where 81 percent of the entrants in the School of Medecine and 55 percent
of those in Law failed.[17] These attrition rates, according to the
survey (p. 30), are the highest of all universities in Africa. The
questions that come to mind upon the examination of these meager outputs
of the Zairian educational system is, why is there so much attrition and
what becomes of the 75 percent or so of the students who do not complete
either their elementary or secondary education? That is, are these
youngsters salvaged in any way or are they abandoned to the streets?

The problem of attrition rate and wastage in the Zairian educational
system is very complex, and cannot be dealt with adequately within the
scope of the present paper; the best that can be done here is to discuss
its salient aspects. The extremely high rate of failure and wastage of
students which have become characteristic of the Zairian educational
system, especially in the pre-university levels, are attributable to
at least two major sources which have been known to the Zairian Govern-
ment since the early days of political independence from Belgium (cf.
Mabika-Kalanda, 1965; Ekwa, 1965; Georis and Agbiano, 1965; George, 1966;
Rideout, Young et al., 1969).

The first factor is the lack of qualified elementary and secondary
school teachers. Although the Republic of Zaire has been recognized as
the second leading African nation, after South Africa, in its elementary
and secondary schools infrastructure with the schooling of 71.5 percent
of its elementary school children, 3 percent of the secondary school,
and a literacy rate of 40/45 percent (Ekwa, 1965; Georis and Agbiano,
1965; George, 1966; Rideout, Young, et al., 1969; Foster, 1971), what
these impressive figures do not reveal is the tremendous imbalance that
exists in the system. For instance, from 1954 to 1960 only 30 percent

of the elementary school entrants completed the first four years of
schooling; this rate appears to have been maintained for the 1962-68
academic years at which time over 54.7 percent of the students were in
the first two grades (Rideout, Young et al., 1969). A similar situation
exists in the secondary school system where 63 to 65 percent of the
total enrollment during the 1966-68 academic year was found in the
first two years (Rideout, Young et al., 1969).

A large part of the high attrition rate is due to what has become
a rather eternal problem in Zairian education: viz., the lack of qualified
teachers. George (1966: 87) observes in this regard that

(6) Despite the large annual output of approximately 4,000 from the
secondary level teacher-training schools, the proportion of
qualified teachers (those holding a diploma earned after completing
a 4- or 6-year secondary level teacher-training program) declined
between 1959-60 and 1962-63.... Many of the thousands of Congo-
lese trained as teachers have either not entered the profession at
all or have left it to take other kinds of jobs with the Government
or with private companies.[18]

According to the same source, "fewer than 10,000 of the total 43,000
primary teachers employed in 1962-63 held a diploma" (George, 1966: 87).
Thus for the 1956-64 academic years the distribution of the qualified
and unqualified elementary school teachers looked as in Table III
(George, 1966: 87):

Table III: Subcategorization of Zairian
Elementary School Teachers

Qualification	Year & Number of Teachers			Percent		
	1959-60	1962-63	1963-64	1959-60	1962-63	1963-64
Total No. of Teachers	33,244	47,391	52,087	100,0	100.0	100.0
4- or 6-year Diploma	9,940	11,203	14,855	28.2	23.6	28.5
E.A.P. certi- ficate (2yrs)[19]	11,996	18,994	17,03o	33.8	40.1	32.7
Certified With- out training as Teacher	13,408	17,199	2 ,202	38.0	36.3	38.8

That is, for the three academic years above from which these statistics
are drawn, the percentage of qualified teachers averages less than a
third (26.76) of the total staff, while that of unqualified teachers
(bearers of certificates) averaged over two-thirds (73.23). In actual
practice this percentage is much higher, probably 75 , because many of
the qualified teachers hold administrative jobs in the school system
and are thus exempted from teaching. What this means is that the students
depend on three-fourths of unqualified teachers for their education.
This problem is further complicated by the fact that these teachers; who
have very little or no command of French, have to teach various subjects
in French in accordance with the 1961-62 educational reform act which
requires French as the medium of instruction for the entire educational
system (Georis and Agbiano, 1965; George, 1966).

Needless to say, this situation amounts to asking the blind to lead
the blind. In most instances, however, the teachers simply have no
choice but to teach their courses in the lingua franca of the region
where the schools are located. Unfortunately this alternative only
compounds the miseries of the students by simply postponing their day
of reckoning when they will have to submit to a comprehensive examination
in French in order to graduate from elementary school and gain
entrance into the secondary schools. Clearly, given the lack of
general training on the part of three-fourths of Zairian elementary
school teachers, and their incompetence in French, one cannot expect
the students to acquire those basic skills for which they are tested.

It is with this background of unpreparedness that graduates of
elementary schools in Zaire seek entrance into the nation's secondary
schools by submitting to a highly comprehensive and selective secondary
school entrance examination in French on the major subjects taught in
elementary schools. The few students (38-40) who manage to pass this
examination gain entrance into the secondary school level; those who
fail become drop-outs. Since there is no provision for recuperating
such youngsters and channelling their talents into other areas of education,
they are generally left to fill the rows of the unemployed.

Those students admitted in the secondary schools, however, fare
only marginally better teachers-wise than those in elementary schools:
the problem of unqualified teachers continues to affect the quality of

secondary education in Zaire. For instance, during the 1967-68 academic year, there were 6,722 secondary school teachers of whom 2,722 were foreign and 3,957 Zairian nationals (Rideout, Young, et al., 1969). Their distribution in terms of training was as in Table IV below (Rideout, Young, et al., 1969):[20]

Table IV: Subcategorization of Secondary School in Zaire in 1967-68 According to Training

		Unqual- ified	Indeter- minate	D.4	D.6	D.8	D.10
A. Europeans	No.	9	206	60	692	1056	748
	%	1.3	7.4	2.1	24.9	38.1	26.9
B. Zairians	No.	56	101	418	2514	664	198
	%	1.4	2.5	10.5	63.6	16.8	5.0

According to Zairian educational regulations, in order to qualify as a secondary school teacher, one must complete at least a two-year college level teacher's training course after graduation from a six-year secondary school program. Completion of this program entitles one to an associate degree known as Regence (D.8). Recipients of a six-year teacher's training program (D.6) may teach, in case of need only in the first two years of secondary school; recipients of a four-year secondary school training may not teach in general (non-technical) secondary schools. But what the figures in Table IV, which are representative of the qualifications of secondary school staff, reveal is that over 35 percent of the European teachers and over 75 percent of the Zairian teachers in the secondary schools in Zaire during the 1967-68 academic year were unqualified. The average of the unqualified teachers from the two categories is around 56 percent, compared to that of the qualified teachers (those holding a Regence and a Licence or B.A. (D.10)) which is slightly over 43 percent. From a purely statistical point of view, the figures given above on the qualified teachers are good if all the teachers are taken as a group, but from a practical point of view, these figures are not indicative of the real situation in view of the fact that many of the Europeans were only part-time teachers. The

bulk of the teaching duties was, therefore, assigned to unqualified teachers, viz. the 63.6 of Zairians who held a D.6. Hence, the problem of staffing in secondary schools in Zaire differs from that of the elementary schools only in degree, but not in kind.

The second factor is the language of instruction. The use of French as the medium of instruction in all levels of formal education has already been discussed to a certain extent in connection with the training of elementary school teachers. What remains to be said here is the extent to which French appears to affect the learning habits of elementary school students.

French was adopted as the medium of instruction for the entire country in the educational reform of 1961-62 largely because of the myths discussed in section (2.1). This policy replaced a colonial one which allowed teaching in Lingala, Swahili, Kikongo, and Tshiluba up to the third grade, and often up to the sixth grade for certain subjects (George, 1966; Georis and Agbiano, 1965; Spencer, 1971). While most secondary school teachers, unlike their elementary school colleagues, have a good command of French, their students have basically the same problem with French as those in elementary schools. The problem is one of lack of reinforcement in the language. Zaire, unlike Senegal where 0.22 percent of the population claims French as a native language and an estimated 15 percent speaks it as a second language (Alexandre, 1971), appears to have an insignificant percentage of native speakers of French. The segment of the population that speaks it as a second language, as we stated previously, is more or less coterminous with that of the secondary and university graduates. As far as the teachers population is concerned, according to R. Cornevin of the "Academie des Sciences d'Outre-mer, out of some 35,000[21] elementary school teachers in 1962, it was estimated that 15,000 of them had very little command of French (cited by Le Monde, August 10, 1965, and Champion (1974: 111)).

Whatever the correct figures about the speakers of French in Zaire may turn out to be (after a language census is taken), it is a well known fact that the number of Zairian families that speak French at home with their children, as to give them the needed reinforcement is

insignificantly small (cf. Polomé, 1963, 1968; Verbeke, 1966). Most
families use their mother tongues for family affairs even if both parents
speak French fluently. French has been assigned specific functions which
are (a) international communication; (b) formal governmental communication:
and (c) classroom instruction. Except for university students, elementary
and secondary school students seldom speak French to each other unless
they have no language in common between them. And this is rare, because
students often review their lessons in their own languages which may be
Kikongo, Lingala, Lomongo, Swahili or Tshiluba. As a result of this
linguistic situation, which is often reflected in his/her academic perform-
ance, the non-University student in the Zairian education system finds
himself/herself commuting between two worlds which have very little in
common. For example, in an extensive testing experiment conducted in
the elementary schools of Kinshasa in 1965, according to Verbeke (1966:
456-57), it was found that elementary school graduates had a maximum
vocabulary of 1,000 words even though they had some ten hours or so of
French each week for six years. Verbeke points out that these findings
were alarming, especially in view of the fact that the estimated minimum
vocabulary that a student must have in order to perform adequately at
the secondary school level is between 2,000 and 3,000 words. What
findings like these, which are paralleled elsewhere in Francophone and
anglophone Africa, suggest is that the student's daily experience at
home and in the community, on the one hand, and his/her school experience
on the other, are mutually non-enforcing. This is both pedagogically
unsound and counter-productive, and it is, therefore, not surprising
that very few students manage to pass the secondary school and univer-
sity entrance examinations which involve the testing of two subjects:
French and mathematics. Actually, these examinations involve a testing
of the students' competence of French in French and mathematics.

Zaire, like many other African states, needs not only to drastic-
ally reduce illiteracy but also needs thousands of trained cadres for
all sectors of the society. While the attrition rate in the educational
system discussed above cannot solely be attributed to the use of French
as the language of instruction, the continuation of this policy will
not help Zaire combat illiteracy (which is about 55 percent) and meet

its needs for trained manpower. On the contrary, this policy is increasing illiteracy in the country in that elementary school drop-outs lapse back into illiteracy after a prolonged lack of contact with French. And since elementary education is terminal for the greatest number of children, the country must change its language policy vis-à vis education in order to, in part, create an educational basis from which various skilled manpower can be developed.

3.0 A Language Policy for Zaire

It should be evident from the preceding discussion that the improvement of the educational system in Zaire depends not only in a critical reappraisal of the educational goals inherited from Belgians and a re-evaluation of the curriculum,[22] but also on the adoption of a sound language policy. Assuming that Lingala or Swahili will be adopted as the national language of Zaire, the questions that need to be answered here are (1) what will happen to the other three linguae francae? (2) What role if any, will French have in the Zairian educational system? We take up these questions and others in the remainder of this study.

3.1 Implementation of the Language Policy.

While the choice of a national language for education or whatever reason requires a language census for both quantitative and attitudinal aspects, its successful implementation requires first of all the availability of language specialists and teachers, and secondly the availability of textbooks. At the present time the Republic of Zaire is deficient in both of these aspects. The first conference of Zairian linguists, referred to earlier, recognized these deficiencies when they made the following proposals concerning the use of Zairian languages as media of instruction:[22]

(6) We, the Zairian linguists, meeting here from May 22-26, (1974), considering (1) the importance of the teaching of and in Zairians languages in elementary and secondary schools: (2) the policy of return to Zairian authenticity; and (3) the present state of affairs in the area of Zairian languages, make the following proposals:

    a. Concerning the elementary school level,

        (1) that the teaching be done in Zairian languages which will serve as the media of instruction for all the subjects taught from the first till the sixth grade;

    (2)   that the Zairian languages begin serving as the media of instruction starting with the 1974-75 academic year, and that the following year they be introduced in the second grade, and so on progressively until the extinction of the present system (of using French as the medium of instruction);

    (3)   that the inter-regional language, i.e. the dominant language of the region where the school is located, be chosen as the medium of instruction;

    (4)   that the Zairian language which is used as medium of instruction from first grade onward be taught as a subject from the third grade onward;

    (5)   that French be introduced as a subject, but not as the medium of instruction, in the third grade and that its teaching be intensified progressively until the second year of secondary school so that it may serve as the medium of instruction from the third year of secondary school;

b. Concerning the secondary school level,

    (6)   that in the secondary school level all the courses be taught in Zairian languages in the first and second year;

    (7)   that a second Zairian language be introduced in the third year of secondary school; that this language be taught as a subject but not be used as a medium of instruction; (and) that it be chosen in terms of its practical importance;

    (8)   that beginning with the third year of secondary school, the Zairian language that is used as the medium of instruction from the first year on continue to serve as the medium of instruction for certain courses such as social studies, hygiene, composition, religion or civics, nutrition, Zairian commercial correspondance, aesthetics, etc.

    (9)   that beyond the third year of secondary school certain courses be taught temporarily in French (cf. point 8 above);

    (10) that English be taught from the fourth year of secondary school onward.[24]

That is, what the Zairian linguists proposed in their May 1974 conference is that the four Zairian linguae francae, namely, Kikongo, Kiswahili, Lingala, and Tshiluba, be used as media of instruction for all courses for the first eight years of education; and that they continue to serve

in this capacity concurrently with French for certain subjects from the third year of secondary school till the end of this cycle. What this means is that the country will be divided into four lingua franca zones according to the medium of instruction. These will be as follows: (1) Kikongo zone, Bas Zaire (formerly Bakongo) and Bandundu Provinces;[25] (2) Kiswahili zone, Haut Zaire (Oriental province, Kivu, and Shaba (Katanga) Provinces; (3) Lingala zone, Federal District of Kinshasa and the Equateur Province; and (4) Tshiluba zone, the two Kasai Provinces. Then once a student has completed his secondary school training in the regional lingua franca and French, he/she will begin post-secondary education in French. I shall refer to the proposals cited in (6) and just elaborated here as the Lubumbashi language policy plan or simply, the Lubumbashi plan.

These proposals are realistic in view of the present language loyalties, the inadequacy of qualified language teachers and textbooks in Zairian languages. Further, they constitute a return to the language policy practiced by missionaries during the colonial period when six major Congolese languages were officially used as media of instruction in the elementary school system. Specifically, there are at least three major arguments underlying the ten proposals cited in (6). The first argument, referred to in section (2.0) and one that was adopted in the resolutions on the "promotion of Zairian languages" by the May 1974 conference, states that:

(7)   As for the choice of a unique national language, after a lengthy and heated discussion, the assembly (of Zairian linguists) arrived at the following conclusions: (1) that at the present time all the (necessary) conditions are not met for the choice of a unique national language; (2) that it is therefore premature to make a decision on this matter; (3) but the pupils should be given the opportunity to study a second Zairian language of their own choosing in order to promote linguistic unity (Faik-Nzuji, 1974:2-3).

The necessary conditions referred to in this resolution (7) are the total lack of the type of language census discussed in section (2.4) that would have permitted the conference to make a judicious choice. The recommendation that the four Zairian linguae francae serve as the exclusive media of instruction for the first eight years of education follows from the resolution in (7), considering that the Zairian linguists were not

interested in continuing with the French medium for this level of education.

The second argument which is implicit in the recommendations cited in (6) is that Zaire does not at present time possess enough elementary and secondary school teachers who can teach all of their courses in one national language even if such a language were to be chosen; but the country has enough qualified instructors who can teach in the four linguae francae until additional ones are trained.[26] The third argument appears to be tat there are certain courses (cf. recommendation 6b.8), apparently mathematics and sciences, that cannot be taught in the four Zairian linguae francae in the near future. Such courses, according to the recommendation cited in (6b.9), are to be taught "temporarily" (whatever this means) in French. One reason for this might be the problem of translation of scientific texts.

While these arguments are admittedly defensible in view of the present state of development of Zairian languages, the Lubumbashi plan (6) can only be taken as a short term (3 to 5 years) plan which will permit language specialists and educational leaders to prepare a more definitive policy. Regardless of how one might wish to consider this plan, whether as a short-term or long-term plan, there are a number of serious problems that render it impracticable. The first of these is that the plan will create new politico-linguistic loyalties and intensify existing ones. Such attitudes will very likely become divisive as in the case of Flemish and Walloons in Belgium, and thus destroy the national unity that the Mobutu administration has succeeded in promoting. The history of divisiveness in what is today the Republic of Zaire is well known, and needs no further discussion here. When the present administration is compared to the previous one it will be seen that its greatest achievement has been the fostering of national unity and identity partly as a result of President Mobutu's centralization of the administrative apparatus, and partly as a result of his authenticity campaign. It is important to note here that whereas before 1967 most Zairians would have identified themselves first in terms of their region or province of origin (e.g. mukongo, mungala, moluba, etc.) if asked about their nationality, today most Zairians identify themselves first as Zairians.

This process of nation-building has yeat to reach a state of crystalization. If the Lubumbashi plan is adopted, it could eventually lead to the destruction of this fragile nationalism.

The second major problem is that the implementation of the Lubumbashi plan will be very costly to the nation. In particular, given that textbooks will have to either be translated and/or written for the new program, the implementation of the Lubumbashi plan will mean that each book must be translated in four different linguae francae. Since education in Zaire is nationally, rather than regionally, controlled, there is no way to avoid this high cost of printing needed materials. This means that the implementation of the Lubumbashi plan will quadruple not only the cost of producing textbooks, but will also increase unnecessarily the educational budget. Further, the use of French as the second medium of instruction in secondary school means that the National Examination (Examen d'Etat) given to graduating secondary school students each academic year will have to be prepared in five languages: French, Kikongo, Kiswahili, Lingala, and Tshiluba. Were a single national language proposed by the Lubumbashi conference, this type of cost would be avoided.

The third problem is that the use of the four Zairian linguae francae as media of instruction will seriously affect the mobility of students in the educational system. Specifically, the implementation of the Lubumbashi plan will make it difficult, if not impossible, in most cases for a student from one linguistic zone to transfer to a school in another linguistic zone. Students who are in a region such as the Haut Zaire Province (Kisangani) where both Swahili and Lingala are spoken, or parts of regions such as the Bas Zaire and Bandundu where both Kikongo and Lingala are spoken may find it relatively easy to transfer to a Lingala zone but not vice-versa. Similarly, students whose schools are located in linguistic zones which are mutually exclusive can only transfer with a great deal of loss in school years in order to catch up on the study of the regional language, unless, of course, the student happened to have studied the other three linguae francae. But this cannot be done at either the elementary or secondary school level, because the Lubumbashi plan provides only for the study of one other Zairian lingua franca.

Students in Uganda, where a language policy similar to the Lubumbashi plan has been adopted, have encountered the problem we have just described (cf. Ladefoged, et al., 1972).

The fourth and last major problem is similar to the one just discussed, and that is, the restriction of the mobility of teachers. Unless elementary and secondary school teachers are trained in all four Zairian linguae francae, which is very unlikely for the present group or for any that will graduate in the next three years, they cannot easily move from one linguistic zone to another. This problem is not as serious as the previous one, because such a training can be achieved in-service within four or five years; but for the time being instructors who are not conversant in two or three of the languages will have to be confined to their linguistic zones. The greatest effect of the Lubumbashi plan will probably be felt by school administrators whom the national government likes to permute from time to time.

There are a few other minor problems related to those discussed above, but we believe that these four constitute sufficient evidence for rejecting the Lubumbashi plan on both short and long-term points of view. To avoid these major problems, Zaire must adopt a language policy whereby one lingua franca can serve as the medium of instruction for the entire nation. Such a language policy, contrary to the recommendations made by the Lubumbashi conference, is feasible without creating the divisiveness which the conference feared would result.

3.2 A Comprehensive Language Policy Plan. The Republic of Zaire, because of its current socio-political philosophy of authenticity, is in a unique and most favorable situation for adopting a single nationwide language for all of its internal communication needs. What is more, the fact that two of the four linguae francae have been recognized by many Zairian intellectuals to have national status makes the choice of an indigenous national language much simpler than in many other African states. The political conflict that the choice of a national language might generate can be minimized, or avoided altogether, by adopting a comprehensive language policy that can take the other three languages into consideration.

Our proposal in this regard would consist of three major recommend-
ations. The first recommendation would be to make the present Center for
Modern Languages of the National University of Zaire/Lubumbashi into an
institute for Research on Zairian languages. The institute's major
task would be to undertake research in all major Zairian languages, to
coordinate and publish needed textbooks and references in Zairian lang-
uages. The institute should work closely with the Department of African
Linguistics of the UNAZA and the national bureau for research and
development (ONRD) at Kinshasa. Our second recommendation would be to
ask the government to commission the institute to undertake (or coordin-
ate) a national survey of the four linguae francae in order to determine
in fact the extent to which some of these languages are widely spoken,
and the possible or degree of conflictthat might exist in adopting one
of these languages as the national language for education and national
communication. Finally, we would propose that a single indigenous
national language serve as the medium of instruction for all subjects in
the elementary school system, and all secondary school courses except
for mathematics and sciences that will be temporarily taught in French
until adequate textbooks are prepared on these subjects in the national
language. At the university level instruction will be provided in both
the national language and French for different courses.

More specifically, the language policy we are proposing here
consists of the following recommendations at the various levels of
education:

(8) a. At the Elementary School Level

    (1) All subjects are to be taught in the national language from
        grade one until grade six, except as specified in point (2)
        below;

    (2) In regions where the national language is not commonly spoken,
        its use as medium of instruction should be introduced gradually
        in the third grade during the first five years of the implem-
        entation of the language policy; pupils in grades one and two
        in such regions will be taught in the lingua franca of the
        region while learning the national language as a subject:

    (3) The national language will be taught as a subject from grade
        three, except in regions where it is not commonly spoken: in
        such regions it will be introduced earlier as specified in
        point (2) above:

(4) French will be introduced gradually as a subject matter in grade four and will continue progressively until secondary school;

b. At the Secondary School Level

(1) All courses, except for mathematics and sciences which are to be taught temporarily in French until adequate textbooks are produced in the national language, are to be taught in the national language;

(2) Require every student to learn a second Zairian lingua franca of his/her choice, but one which is not his/her first or second language, for at least two years beginning with the first year of secondary school;

(3) Continue the teaching of both French and the national language as subjects; and introduce English as the second foreign language in the third year of secondary school;

(4) Combine and modify the focus of the present "Section Pédagogique" and "Section Litteraire" of the secondary school into "Section des Langues et Litteratures Zairoises";[27]

(5) Include the national language and the other linguae francae as subjects on the end-of-secondary school state examination;

c. At the University Level

(1) Continue the use of the national language as medium of instruction for courses in which it can serve effectively, and use French for all other courses;

(2) Expand the Department of African Linguistics of the UNAZA/ Lubumbashi to a more comprehensive program of (a) general theoretical linguistics, and (b) African languages and literatures, with the latter section focusing initially on Zairian topics/subject matters;

(3) Require all education students at the various teachers' training colleges (e.g. IPN, Ecoles Normales) to learn two other linguae francae besides the ones they already speak/ learned in secondary school, and pass a proficiency examination on them;

(4) Regroup all the existing departments of foreign languages into one department with appropriate subdivisions in order to facilitate specialization.

If the language plan proposed here is adopted after a judicious selection of a national language, which may be either Lingala or Swahili, and is carefully implemented, it is very unlikely that any significant

language conflict would result. Notice that there are several advantages in this proposal compared to the Lubumbashi plan. First, the proposed language plan in (8) calls for a single national language for education and thereby avoids the unnecessary expenses and other difficulties inherent in the Lubumbashi plan (6). To the extent that this plan calls for a unitary national language, it will be more conducive to national unity in a manner consonant with the Mubutu government's efforts for authentic nationalism.

The second major advantage of this plan is that it provides for the training of language teachers (i.e. applied linguists) and general linguists by (a) incorporating a program of Zairian languages and literature in the secondary school system (cf. point 8.b.4); (b) requiring education students to study Zairian languages as an integral part of their teacher-training (cf. point 8.c.3); and (c) by expanding the program of the department of African linguistics (cf. point 8.c.2). The third major advantage is that it provides for the publication of needed language materials through the Institute for Research in African Languages (currently "Centre pour les Langues Vivantes") of the UNAZA.[28] In expanding the functions of this center, the present language proposal not only takes into account long range needs in African linguistics, but also provides a needed research institute for giving practical training to students of linguistics. There is also a built-in advantage to the present plan. And that is, by initially minimizing and eventually eliminating the use of French as a medium of instruction in the pre-university educational system, the plan reduces Zairian dependency on expantriate teachers and the high cost associated with their hiring. Further, the plan compels/forces the national government to train more Zairian teachers.

The language plan proposed here, if adopted, can be implemented on an experimental basis at the beginning of the 1980-81 academic year. This means that the Zairian Government would have over three years to undertake the necessary steps which will result in a judicious choice of national language, and to prepare any additional materials that will be needed for the implementation of the plan. By experimental here, we mean that the national language would be introduced gradually as the

medium of instruction for a few subjects, let us say one-third, in grade
one beginning with the most basic subject matters that the elementary
school pupil encounters in his/her daily life. This experiment should
continue progressively for a period of three years, i.e. until the
1982-83 academic year. Then from 1983-84 onward the plan will be imple-
mented in its entirety on a permanent basis. The experimental period
suggested here is necessary to allow for certain adjustments in the plan
and in the preparation of teaching materials.

4. Conclusion

The choice of a national language for any nation is a political
decision. Linguists, sociologists, and economists can advise a national
government on the matter, but the ultimate decision is almost always
left to the politicians. In the preceding pages, we have discussed the
problem of the choice of an indigenous national language for the
Republic of Zaire within the framework of the political philosophy of
authenticity. Our intention in discussing at some length this philos-
ophy and its current application in Zaire was to show the reader that
the choice of a national language for education in this country is a
logical extension of that political philosophy, and that the political
climate is propitious for such an undertaking.

Our contention is that the choice of a national language for the
Republic of Zaire, as well as for other African states, is a critical
factor in the over-all evaluation of its developmental goals. If Zaire
is seriously concerned about the economic, socio-cultural, and political
development of its people as outlined in the N'Sele Manifesto and within
the framework provided by the philosophy of recourse to authenticity,
the choice of an indigenous national language is an imperative. Authen-
tic development cannot be carried out in a foreign language. Further,
the nation can no longer afford to spend a third of its national budget
on education to educate only a small part of the population at the expense
of the masses. One way of rectifying the educational problems discussed
in this paper and of showing that the socio-political philosophy of
authenticity is a meaningful approach to development is to adopt a
language policy such as the one proposed here.

FOOTNOTES

*This is an expanded version of a paper presented at the 6th Conference on African Linguistics held at the Ohio State University, Columbus, Ohio, on April 11-13, 1975. Since that time I have been engaged in a research project on the language policies of ten African states vis-à-vis education, and the present paper is essentially a progress report on that project. Part of the research for this paper was supported by a small grant from the University of Illinois African Studies Center during the Spring semester of 1975-76. I am grateful to Ndoma Ungina, Edgar Polomé, and Salikoko Mufwene for their invaluable comments and criticisms of an earlier draft of this paper. I am solely responsible for its content.

[1]As used in this paper, the term official language will refer exclusively to a foreign language which is adopted by a national government as the medium of communication at national and international levels; and the term national language will refer to an indigenous language which is adopted for the same ends. I assume in the context of the present work that no foreign language can be called a national language.

[2]This has been the official policy since the advent of the "Ecoles Metroplitaines" in 1958-59, but its application has not been consistent throughout the country.

[3]I am referring here to the Katanga Secession of 1961-63, and the Mulele Rebellion of 1964-65. For a detailed analysis of the first civil war see J. Gérard-Libois (1963), Sécession au Katanga (Bruxelles:CRISP); and for the second, see Benoît Verhaegen (1966) and (1969), Rebellions au Congo, Tome I & II (Bruxelles:CRISP).

[4]I decided to give the original French definition because it is more forceful than the translation given below.

[5](The recourse to authenticity) is the awakening up of political consciousness on the part of the Zairian people to return to their own origins, to seek the value system of their ancestors in order to select those values that contribute to their harmonious and natural development. It is the refusal of the Zairian people to espouse blindly imported ideologies. It is the affirmation of the Zairian man or of the man in short, where he is, and how he is made with his own mental capabilities and social structures. The recourse to authenticity is not a narrow nationalism, a blind return to the past, but it is, on the contrary, a medium of peace between nations, a necessary condition of existence between peoples, (and) a plat-form for cooperation between states. Because authenticity is not only a deep knowledge of one's own culture, but also a respect for the cultural heritage of others.

[6]According to some well-informed sources, President Mobutu's original decision on the replacement of the European or Christian names by authentic African names stipulated that from now on any child born of a Zairian citizen cannot be given a Christian or European sounding name; all children must bear authentically Zairian or African first names. The President's argument was that the system of giving people Christian names was originally imposed on the population by the Catholic church during the colonial era, and constituted, therefore, one of the bad colonial vestiges that the Second Republic had to get rid of. When the decision was announced to the population in form of a decree, however, overzealous Ministers changed its content to stipulate that all Zairians must reject their Christian names and take up authentic Zairian ones. This announcement caught the President himself in surprise with his Christian names of Joseph Desiré, and a Belgian newspaper took advantage of this opportunity to criticize the decree and attack the President for not having changed his own names in compliance with the decree. It was subsequent to this criticism that President Mobutu adopted the names of Sese Seko Kuku Ngendu Waza Banga.

[7]These changes were misinterpreted by the Western Press as another example of President Mobutu's attempt to efface everything associated with Belgian colonialism. The fact of the matter is that most of the major Zairian cities that were renamed by Belgians after the annexation of the Congo to Belgium in 1908 were always known to the general population by their old African names. For instance, the capital city was officially known as Léopoldville, but it was always called unofficially and concurrently Kinshasa or Kinsasa by the masses. Thus what the Mobutu's administration did in 1966 was simply to officialize the original names of these cities and get rid of the Belgian imposed names.

[8]Zaire is a Portuguese corruption of the Kikongo word Nzadi which means a river that swallows all others. The argument given to the Zairian press by the President for the change of the authe tic name of Congo, actually Kongo, to Zaire was that the Kingdom of t . Kongo embraced only part of what is today the Republic of Zaire; but the Zaire River runs throughout the entire country. It would be, therefore, the argument went, more symbolic of our national unity to name the country after the river. The argument is very interesting, but why adopt the corrupted version of this name instead of the original? The Government has never answered this question to my knowledge. Needless to say, there is some irony in this matter.

[9]These terms may be more useful to political scientists than to linguists, because they reflect spheres of political influence on the continent.

[10]Even though French was supposed to be used as the medium of instruction from the third grade onwards when Belgian colonial administration opened up public schools for the first time in 1954, this policy was not enforced until the 1958-59 academic year when the so-called regime metropolitain, until then restricted to Belgian and other

European children, was introduced in the country. Therefore, the use of this language by the would-become elite of the country was even more restricted.

[11]Grouped under secondary schools here are different levels of post-primary training: (a) ecoles des moniteurs "teachers' training schools" (4 years); (b) écoles moyennes "secretarial schools" (4 years); (c) écoles professionnelles "trade schools" (4 years); (d) écoles secondaires "secondary schools" and/or humanités modernes "specialized type of secondary schools" (6 years). University here is understood as any institution of post-secondary training.

[12]This attitude is still prevelent in the Zairian secondary schools and universities according to information I obtained from colleagues who have recently returned from the National University of Zaire (UNAZA).

[13]Ferguson's (1968) definition of language, while perhaps socio-logically useful, is linguistically useless because any language is capable of conveying any concepts that any other human language can, even if this has to be done by paraphrastic constructions. Further, there is no scientific reason why the defining characteristics of language modern-ization must be based on "industrialized" and "secularized" societies.

[14]Bokula's chart has eight provinces according to the current administrative divisions of the country, but I have preferred to use the old provincial divisions to make the chart more revealing.

[15]This was a very significant move in view of the fact that the Catholic church in Zaire which not only claims the largest number of followers but has also dominated Zairian education for decades, has its headquarter in Kinshasa. And the Kinshasa diocese is considered as the most influential; therefore, this decision will have positive implications elsewhere in Zaire both within and outside of the Catholic church.

[16]The body of literature developed by the Institute of Swahili Research of the former University of East Africa appears to be large enough to fulfill the needs of Zaire during the first stages of implementation of a national language policy should Swahili be chosen.

[17]These figures are particularly disturbing considering that the 1963 European Economic Community Mission estimated that the Congo would require 1,112 doctors and medical assistants by 1970 to achieve a ratio of one doctor for every 16,000 patients. The Mission's report projected that a total of 263 doctors would be available from Congolese studying abroad (e.g. Belgium, Switzerland, France, etc.) and from the Université Officielle du Congo and Université Lovanium.

[18]The major reason for the exodus of teachers from the teaching profession is the irregularity of payment of salaries or non-payments for periods going up to twelve months. This is particularly true of teachers working away from major urban centers. Many teachers who found themselves in this situation were forced to look for jobs elsewhere; and

since this is a constant phenomenon in the Zairian educational system, the exodus continues. University graduates whom I met in Zaire during my recent visit there in February expressed the same f elings of discouragement with the teaching profession.

[19]E.A.P. stands for Ecoles d'Apprentissage Pédagogique. This is a two-year post elementary school level for training lower primary teachers. The program leads to a certificate in education, but does not prepare its graduates to teach beyond the second grade.

[20]The percentages in this table do not add up to 100%; the error is from the original table given in Rideout, et al. (1969:63).

[21]The figure cited by Cornevin here is inaccurate; the number of elementary school teachers in 1962 was 33,244. This means that the percentage of poor speakers of French in the teaching staff was much higher than Cornevin's figure would have led us to believe, and that the number of fluent speakers was only 18,244 rather than 20,000.

[22]I am using the term in a much more wider sense to include both the type of courses that are taught in the school system and the contents of such courses. My point of view is that the courses and their contents must reflect the Zairian and African milieux for the children to have a meaningful educational development. I shall deal with this problem and related ones in a subsequent study.

[23]These proposals are textual translations of the original French report of the Conference. Several other resolutions were adopted concerning the teaching of and research in Zairian languages.

[24]I have not cited parts (c) and (d) of these resolutions because they are not immediately relevant here; I shall refer to them below.

[25]There may be a problem here in sub-dividing the present eight provinces into four linguistic divisions in terms of the dominant lingua franca, because some provinces appear to be dominated by two linguae francae. This is the case for Shaba (formerly Katanga) which is Luba dominated in the northwest, but Swahili dominated in the copperbelt region of the south. Haut-Zaire (Oriental) also is in a similar situation with the increasing spread of Lingala in regions originally dominated by Swahili; and Bandundu, according to Salikoko Mufwene (personal communication), appears to be divided up between Kikongo and Lingala.

[26]In the Zairian educational system, each elementary school instructor teaches all the subjects in his/her grade; this means that the instructor must be well-versed in the various aspects of the language of education. Secondary school instructors do not have this type of responsibility, they teach only those courses for which they are specialists.

[27] In combining these two sections, care should be taken that only student-teachers take courses on pedagogy or teaching methods; students not specializing in education should take other elective courses in their area.

[28] Any existing centres for publication of teaching materials, e.g. CELTA (Centre de la Linguistique Theorique et Appliquees) as well as the Centre pour les Langues Vivantes, must be regrouped into or completely replaced by the Institute for Research in African Languages.

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ON THE SYNTAX AND SEMANTICS OF WH-QUESTIONS
IN KIKONGO AND KISWAHILI

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0. INTRODUCTION

Until recently, generative transformational grammarians were agreed upon the following two basic assumptions: (1) that the proper domain of syntactic studies is the "sentence" or the single utterance that is representable in a phrase-marker; and (2) that linguistic theory is a theory of linguistic competence, but not of performance (cf. Chomsky 1957, 1964, 1965; among others). Chomsky (1964: 52) is very explicit about the latter assumption when he states:

(1) It seems natural to suppose that the study of actual linguistic performance can be seriously pursued only to the extent that we have a good understanding of the generative grammars that are acquired by the learner and put to use by the speaker or hearer.

In the Aspects of the Theory of Syntax (1965: 4-11) Chomsky is even more categoric in relegating linguistic performance to marginality. .· ·

Both assumptions (1) and (2) have come under considerable attack in recent years, especially this decade. Attempts to preserve the first assumption.and the requirement .that transformational rules (T-rules hereafter) can refer only to a pair of adjacent P-Markers in any derivation, for example, have led to the development of proposals such as "global rules" (cf. G. Lakoff, 1970) and "transderivational" constraints (cf. G. Lakoff , 1973) where it has been argued that certain linguistic phenomena can best be explained only if T-rules are allowed to refer back to previous derivations. The second assumption has been challenged by studies in sociolinguistics (cf. Weinreich, Labov and Herzog, 1968: Labov, 1970), pragmatics (cf. G. Lakoff, 1969: R. Lakoff, 1973: Cole and Morgan, eds., 1975) where it has been argued essentially that appropriateness of utterances, the beliefs of the speaker and hearer, presuppositions and other pragmatic factors are important aspects and subject matter of linguistic studies.

The present paper is another study in the same line of thinking. In particular, the paper presents an analysis of Wh-Questions in two Bantu languages, Kikongo and Kiswahili, in which two types of Wh-question constructions are recognized: Simple Wh-Questions, and Focused Wh-Questions. In the light of these facts, it is argued that an adequate characterization of Wh-questions in these languages and other Bantu languages cannot be achieved unless the assumptions that the proper domain of syntactic investigations is the sentence and that linguistic theory is a theory of competence, but not of performance, are rejected. This is because the facts under study here call for giving due consideration to factors such as answers to questions, appropriateness of such answers, presuppositions, and certain precedence relations in discourse. Following Labov (1970: 81) and R. Lakoff (1973: 454), it is assumed here that a speaker may ask a question appropriately only under the following conditions:

(2) a. The speaker does not know the answer and wants to (sincerely);

   b. The speaker has reason to believe that the addressee knows the answer (to the question).

Conversely, an answer to a question is considered appropriate if it provides all and only the information sought by the questioner. This assumption is in accordance with Grice's (1975: 45) conversational implicatures maxims of quantity. With these assumptions in mind, let us now consider the facts of Wh-questions in Kikongo and Kiswahili.

1.0 WH-QUESTIONS IN KIKONGO AND KISWAHILI

   1.1 Basic Word Order. Like other Bantu languages, Kikongo (Zone H) and Kiswahili (Zone G) are predominantly SVO languages, as may be seen from the following examples:

(3) Kikongo

   a. Beya pes-ákà Nzuzi mo-kanda.
       Beya give-ed Nzuzi a/the letter
       (Beya gave gave Nzuzi a letter.)

   b. �Pes-ákà Beya Nzuzi mo-kanda.
       give-ed Beya Nzuzi a/the letter

   c. ᴯPes-aka Nzuzi Beya mo-kanda.
       give-ed Nzuzi Beya a/the letter

(4) Kiswahili

 a. Bakari a-na-wa-som-e-a   wa-toto ki-tabu. (SVOIo)
   Bakari Ag-TA-Op-read-Ext-Suf. children book
   (Bakari is reading a/the book to/for the children.)

 b. *A-na-wa-som-e-a   . Bakari wa-toto ki-tabu. (VSO...)
   Ag-TA-OP-read-Ext-Suf. Bakari children book

 c. *A-na-wa-som-e-a   wa-toto Bakari ki-tabu (VOS...)
   Ag-TA-OP-read-Ext-Suf. children Bakari book

That is, focusing for the moment on the word order relation between the
subject, verb, and object (without differentiating the latter into direct
and indirect object), what the examples in (3) and (4) illustrate is that
the neutral or unmarked word order in the simple sentence in these langu-
ages is SVO; any other word order which may involve the permutation of
these constituents so that the verb occurs first is unacceptable, as illus-
trated in (3b-c) and (4b-c). There are, however, instances of VOS, OSV,
and OVS superficial word orders found in constructions involving topical-
ization, dislocation, and passivization: such cases are considered as
instances of marked word order.

 The relative ordering of the direct and indirect object in these two
languages is somewhat flexible compared, for instance, to a number of
Central Bantu languages (cf. Bokamba, 1976). When two object noun phrases
occur in the same sentence as in the examples in (3) and (4), the unmarked
word order is for the indirect object to precede the direct object, as in
(3a) and (4a); the reverse order, viz. direct object before indirect object,
is also allowed, as exemplified in (5) and (6) below, under a well-defined
discourse context: emphasis.

(5) Kikongo

 a. Beya pes-ákà Nzuzi mo-kanda.
   (Beya gave Nzuzi a/the letter.)

 b. Beya pes-ákà mo-kanda na Nzuzi.
   (Beya gave   a/the letter to Nzuzi.)

 c. *Beya pes-ákà mo-kanda Nzuzi.

(6) Kiswahili

 a. Bakari a-na-wa-som-e-a wa-toto ki-tabu.
   (Bakari is reading a/the book to/for the children.)

 b. Bakari a-na-wa-som-e-a ki-tabu wa-toto.
   (Bakari is reading a/the book to/for the children.)

c. *Bakari a-na-wa-som-e-a ki-tabu <u>na</u> wa-toto.

The main difference between the (a) and (b) sentences in each language is that in the latter the direct object is being emphasized, whereas in the former neither object is being emphasized. Kikongo achieves this type of emphasis by not only moving the direct object next to the verb, but also by marking the indirect object by means of the preposition <u>na</u>: this preposition occurs between the two objects, as in (5b).[1] This object marking device is commonly used by a number of Bantu languages (cf. Givón, 1972, and personal communication). Swahili, however, does not employ this device, as the ungrammaticality of (6c) attests; the direct object is simply moved next to its verb and given intonational prominence.

In sentences involving time and locative adverbs there are also two common word orders, the one in which the adverb occurs at the end of the sentence being the unmarked. This can be seen in sentences like the following:

(7) Kikongo

    a. Beya pes-ákà Nzuzi mo-kanda mazono.
        (Beya gave ·Nzuzi a/the letter yesterday.)

    b. Mazono (,) Beya pes-ákà Nzuzi mo-kanda.
        (Yesterday Beya gave Nzuzi a/the letter.)

(8) Kiswahili

    a. Bakari a-na-wa-som-e-a wa-toto ki-tabu sasa.
        (Bakari is reading a/the book to/for the children now.)

    b. Sasa (,) Bakari a-na-wa-som-e-a wa-toto ki-tabu.
        (Now, Bakari is reading a/the book to/for the children.)

Here again, the difference between the (a) and (b) sentences in both languages is emphasis: in the (b) sentences the time adverb is being emphasized, whereas in the (a) sentences it is not. The constructions exemplified here do not, however, exhaust the possible set of permutations that the time adverb can undergo: there are many others that will be discussed in section (1.4) below.

1.2 Simple Wh-Questions. Unlike in Dzamba, Lingala, and Likila (cf. Bokamba, 1976), there is no Wh-Question Movement rule in Kikongo and Kiswahili. Given the structures underlying sentences like the Kikongo (5a) and the Kiswahili (6a), for example, if the object noun

phrases are questioned the resulting constructions will be as illustrated in (9) and (10):

(9) Ki<u>ko</u>ngo

a. Beya pes-aka mo-kanda na Nzuzi.
    (Beya gave a/the letter to Nzuzi.)

b. Beya pes-aka NA NANI mo-kanda?
    Beya give-ed TO WHOM a/the letter
    (To whom did Beya give a/the letter?)

c. Beya pes-aka mo-kanda NA NANI?
    Beya   gave a/the letter TO WHOM
    (To whom did Beya give a/the letter?)

d. *Beya pes-aka NANI mo-kanda?

e. *Beya pes-aka mo-kanda NANI?

f. Beya pes-aka Nzuzi INKI (kima)?
    Beya gave   Nzuzi WHAT (thing)
    (What did Beya give Nzuzi?)

g. Beya pes-aka INKI (kima) na Nzuzi?
    Beya   gave WHAT (thing) to Nzuzi
    (What did Beya give to Nzuzi?)

h. *Beya pes-aka INKI (kima) Nzuzi?

(10) Kiswahili

a. Bakari a-na-wa-som-e-a wa-toto ki-tabu.
    (Bakari is reading a/the book to/for the children.)

b. Bakari a-na-wa-som-e-a NANI ki-tabu?
    Bakari is-reading-to/for WHO(M) a/the book
    (To/for whom is Bakari reading a/the book?)

c. *Bakari a-na-wa-som-e-a ki-tabu NANI?
    (To/for whom, specifically, is Bakari reading a/the book?)

d. Bakari a-na-wa-som-e-a wa-toto NINI?[2]
    Bakari is-reading-to/for children WHAT
    (What is Bakari reading to/for the children?)

e. *Bakari a-na-wa-som-e-a NINI wa-toto?
    (What, specifically, is Bakari reading to/for the children?)

That is, when the indirect object noun phrase, Nzuzi, in sentence (9a) is questioned, the interrogative phrase NA NANI may occur either in the position originally occupied by this object or after the direct object, as in (9b) and (9c), respectivel. In the latter case, the interrogative phrase occurs exactly in the position previously occupied by the indirect object in the construction I have termed marked (see 5b). Notice from the ungrammaticality of Kikongo (9d-e) that the interrogative element in this language is marked for case; the interrogative word NANI, which is

used indiscriminately in most Bantu languages in questioning direct and indirect object NP's referring to humans, cannot be so used in Kikongo. Nani "who" can only be used in questioning subject and direct object NP's which are [- human] in this language. As in the case of the indirect object, when the direct object noun phrase is questioned from the structure underlying Kikongo (9a), the interrogative word INKI (which is used for non-human NP's) or the phrase INKI KIMA (literally, What thing) simply replaces the noun being questioned, as illustrated in (9f-g). Sentence (9h) is ill-formed precisely because it is not derived in accordance with this replacement process; the interrogative element INKI KIMA is preceding the indirect object in a construction where the word order is unmarked. Kiswahili sentences (10b, d) illustrate the same replacement process; sentences (10·c,e) are inappropriate, but fully grammatical, because they cannot be used in the same discourse context as (10b, d). The former set is one type of what I call "focused Wh-questions," while the latter is an instance of simple Wh-questions. The distinction here is not simply a convenient one, but rather a necessary one as dictated by the type of answers that each type of questions requires. I shall return to this point in the next section.

The answer to these simple questions, if a full sentence answer is given for each of them, are the sentences given in (5) and (6) above. Specifically, sentence (5a) and (5b), repeated below for convenience, can serve as appropriate responses to questions (9b) and (9c), respectively, in Kikongo:

(5) a. Beya pes-áká Nzuzi mo-kanda.
        (Beya gave Nzuzi a/the letter.)

    b. Beya pes-áká mo-kanda na Nzuzi.
        (Beya gave a/the letter to Nzuzi.)

While these responses can be reversed by replying (5a) to question (9c) and (5b) to (9b) without affecting their acceptability, the preferred question-answer pairing is (9b)/(5a) and (9c)/(5b). Similarly, the responses to questions (9f) and (9g) are (5a) and (5b), respectively. The same kind of pairing obtains in Kiswahili. In answer to questions (10a) and (10b) one can appropriately answer (6a) and (6b), repeated below for convenience, respectively:

(6) a.   Bakari a-na-wa-som-e-a   wa-toto ki-tabu.
       .(Bakari is reading a/the book to/for the children.)

    b.   Bakari a-na-wa-som-e-a   ki-tabu wa-toto.
       (Bakari is reading a/the book to/for the children.)

These statements, however, cannot serve appropriately (in the manner
defined above) as replies to questions (10c, e), because what is being
requested in these questions is a specific piece of information. What
the speaker is seeking in (10c) is a set of names, e.g. Wambula and
Asha: he/she already knows or believes that Bakari is reading a book ·.
to/for some individuals and believes further that Bakari is reading some-
thing else (may be a story, a poem) to another party or parties. Now,
what he/she wishes to know in uttering (10c) is to/for whom, specifical-
ly, is Bakari reading the book, as opposed to the story or the what not.
This being the case, sentences (6a-b) cannot serve as appropriate answers
because they do not satisfy the questioner. Similarly, question (10e)
is seeking the specific identification of the "object" that Bakari is
reading, and the respondent will have to say something like: "a story
book," "a math book," etc.

    From a purely syntactic point of view, question such as the Kikongo
(9 b-c,f-g) and the Kiswahili (10b, d) can simply be analyzed in terms
of a replacement rule which substitutes the appropriate interrogative
pronoun for a NP marked as undergoing the rule. This is precisely what
happens when a subject noun phrase is questioned, as may be seen from
the following sentences:

(11) Kikongo

    a.   NANI   pes-ákà   Nzuzi mo-kanda?
         WHO   gave   Nzuzi a/the letter
         (WHO gave Nzuzi a/the letter?)

    b.   NANI   pes-ákà   mo-kanda na   Nzuzi?
         (WHO gave a/the letter to Nzuzi?)

    c.   *Pes-ákà   Nzuzi mo-kanda NANI?

    d.   *Pes-ákà   mo-kanda na Nzuzi NANI?

These facts are paralleled in Kiswahili and many other Bantu languages
for cases involving a questioned subject noun phrase. There is no
Wh-Q-Movement in constructions involving questioned objects and subjects.

1.3 <u>Focused Wh-Questions</u>. The question constructions presented
in (9) and (10) are not the only type of Wh-questions found in Kikongo
and Kiswahili: there is another type which is as common as those in
(9) and (10). The following set of examples illustrate this kind of
construction:

(12) Kikongo

    a. Beya pes-ákà Nzuzi mo-kanda mazono.
        Beya gave Nzuzi a/the letter yesterday
        (Beya gave Nzuzi a/the letter yesterday.)

    b. Beya pes-ákà mo-kanda mazono NA NANI?
        Beya gave a/the letter yesterday TO WHOM
        (To whom did Beya give a/the letter yesterday?)

    c. NA NANI Beya pes-ákà mo-kanda mazono?
        TO WHOM Beya gave a/the letter yesterday
        (To whom, specifically, did Beya give a/the letter yesterday?)

    d. *NANI Beya pes-ákà mo-kanda mazono?

    e. Beya pes-ákà Nzuzi mazono INKI (kima)?
                      Nzuzi yest. WHAT (thing)
        (What did Beya give Nzuzi yesterday?)

    f. INKI (kima) Beya pes-ákà Nzuzi mazono?
        WHAT (thing) Beya gave Nzuzi yest.
        (What, specifically, did Beya give Nzuzi yesterday?)

    g. INKI (kima) Beya pes-ákà na Nzuzi mazono?
        (What, specifically, did Beya give to Nzuzi yesterday?)

(13) Kiswahili

    a. Bakari a-na-wa-som-e-a wa-toto ki-tabu sasa.
        Bakari is-reading-to/for children book now
        (Bakari is reading a/the book to/for the children.)

    b. Bakari a-na-wa-som-e-a ki-tabu sasa NANI?
        Bakari book now WHO(M)
        (To/for whom else can Bakari be reading the book now?)

    c. NANI Bakari a-na-wa-som-e-a ki-tabu sasa?
        (To/for whom, specifically, is Bakari reading the book now?)

    d. Bakari a-na-wa-som-e-a wa-toto sasa NINI?
                    children now WHAT
        (What else can Bakari be reading to/for the children now?)

    e. NINI Bakari a-na-wa-som-e-a wa-toto sasa?
        (1. What, specifically, is Bakari reading to/for the children
        now? 2. Which reading, out of a set, is Bakari reading to/for
        the children now?)

Assuming that no other movement rule is involved in the derivation
of Kikongo and Kiswahili questions in (12) and (13). respectively, all
of these constructions can be analyzed syntactically as involving a right-
ward and leftward Wh-question movement rule. For example, given the struc-
ture underlying sentence (12a) where the indirect object noun phrase pre-
cedes both the direct object and the adverb and the latter occurs last
in the sentence (i.e. SVIoDoAdv), question (12b) can be analyzed in terms
of a Wh-question rule that moves the noun phrase being questioned, viz.
the indirect object noun Nzuzi, over the direct object and the adverb.
Similarly, sentence (12c) would be derived presumably from the same deep
structure via a Wh-question rule that moves the same constituent to sent-
ence initial position where it eventually gets a spelling. The remain-
ing questions would be analyzed in a similar fashion according to whether
the interrogative element occurs sentence-finally or sentence-initially.
The rule involved here could be viewed as consisting of two sub-rules
each of which is sensitive to certain well defined pragmatic conditions
in the discourse in a pragmatic oriented analysis. If one type of condi-
tions is met, the rule applies to the right; and if another type of con-
ditions is met, the rule applies to the left. One would have no diffi-
culty, theoretically, in positing such conditions to make the rule work
correctly.

In practice, however, to say nothing about the non-explanatory
value of such a proposal were one to seriously suggest it, there are no
such pragmatic discourse conditions in these two languages to substanti-
ate this proposal. In view of this fact, a second plausible alternative
would be to propose a single Wh-question movement rule to the left, and
argue that sentences in which the interrogative element occurs sentence-
finally (as in 12b, e, and 13b, d) are derived via right dislocation or
a similar rule. If this is correct, then the questions presented in
(9) and (10) would be accommodated under this analysis by considering them
to be instances of Echo-Questions. This analysis, if correct, would be
consistent with the presently accepted analysis of Wh-questions in the
standard theory of syntax (cf. Katz and Postal, 1964; Baker, 1970;
Bresnan, 1970; and Bach, 1971). As it turns out, however, this solution,
which is also predicated on the assumption that no other movement rule

is involved in the derivation of the question sentences in (12) and (13)
cannot be entertained either, because there is another movement rule as
the Kikongo sentences in (14) show:

(14) Kikongo

    a. Beya pes-ákà Nzuzi mo-kanda mazono. (identical to (7a))
        (Beya gave Nzuzi a/the letter yesterday.)

    b. Mazono (,) Beya pes-ákà Nzuzi mo-kanda. (= to (7b))
        (Yesterday Beya gave Nzuzi a/the letter.)

    c. Beya pes-ákà, mazono, Nzuzi mo-kanda.
        (Beya gave Nzuzi a/the letter yesterday, but not any other day.)

    d. *Beya pes-ákà mazono Nzuzi mo-kanda.

    e. Beya, mazono, pes-ákà Nzuzi mo-kanda.
        (Beya gave Nzuzi a/the letter yesterday, but not any other day.)

    f. *Beya mazono pes-ákà Nzuzi mo-kanda.

As stated in section (1.1) above, given a sentence that contains two
object noun phrases and an adverb in Kikongo, the neutral or basic word
order is for the adverb to occur at the end of the sentence, after both
object NP's, as in sentence (14a). The time adverb in (14a) can be pre-
posed via the rule of Adverb Preposing to derive sentences like (14b);
such sentences are as common in Kikongo as they are in other natural lan-
guages. The difference in reading between sentences (14a) and (14b) is
simply a matter of emphasis: in the latter the adverb is being emphasized,
while in the former it is neutral.

Notice, however, that in addition to the occurrence of the time ad-
verb in the sentence-final and initial positions (14a-b), it is also
permissible for this element to occur immediately before both object
noun phrases, as in (14c), or before the verb, as in (14e), provided
that it is heavily stressed. If the adverb is not heavily stressed, the
resulting sentence(s) will be ungrammatical, as (14d, f) attest. Sent-
ences like (14c, e) are characteristic of a style that my language con-
sultants for this language call "journalistic style;" they are also
typical of certain conversational exchanges involving debates. Semantic-
ally, sentences like (14c) and (14e) indicate different degrees of em-
phasis, and are for all practical purposes synonymous in the sense that
they have the same truth value. Sentences like these, while common in

both Kik<u>o</u>ng<u>o</u> and Kiswahili,[3] are not permissible in Dzamba, Likila, and
Lingala (Bantu zone C_{32}); the adverb in these languages can only occur
sentence-finally and sentence-initially (cf. Bokamba, 1976).

Now, if sentence (14b) can be derived from the structure underlying
(14a) via Adverb Preposing in accordance with Ross's (1967:168) formu-
lation of this rule, for example, sentences (14c, e) cannot so be deri-
ved because the superficial forms of these sentences do not correspond to
the structural change of the Adverb Preposing rule. My contention is that
sentences (14c, e) are derived via a focus rule that preposes noun phrases
and a certain class of adverbs, viz. time and locative, towards the be-
ginning of the sentences or clauses in which such elements are immediately
contained. I shall refer to this rule as Focus Preposing in contra-
distinction to Stress Focus. Focus Preposing, I would like to argue, is
sensitive to precedence relations in discourse in a manner that will be
defined precisely below.

Focus Preposing is involved in the derivations of the question con-
structions in (12) and (13), that is, it interacts with the rule of
Wh-question formation discussed previously. Consider, for example, the
derivation of the Kik<u>o</u>ng<u>o</u> sentences (12b-c). Given the structure under-
lying sentence (12a) where the indirect object NP, Nzuzi, is marked to
undergo the rule of Wh-Question Formation, the derivation of the simple
Wh-question given in (9b) and those in (12b-c), which I shall refer to
hereafter as "focused Wh-questions," will proceed as follows:[4]

(15) Kik<u>o</u>ng<u>o</u>

    a. Beya pes-ákà mo-kanda na Nzuzi maz<u>o</u>n<u>o</u> (Underlying)
                              [+WH]

    b. Beya pes-ákà Nzuzi mo-kanda maz<u>o</u>n<u>o</u> (Dative Movement)
                    [+WH]

    c. Beya pes-ákà mo-kanda NA NANI maz<u>o</u>n<u>o</u>? (Wh-Q-Formation)

    d. Beya pes-ákà NA NANI mo-kanda maz<u>o</u>n<u>o</u>? (Wh-Q-Formation)

    e. Beya pes-ákà mo-kanda maz<u>o</u>n<u>o</u> NA NANI? (Focus Prep/Adv.)

    f. NA NANI Beya pes-ákà mo-kanda mazono? (Focus Prep/WH)

That is, given the underlying string (15a), Dative Movement will yield
(15b) to which Wh-Question Formation can apply to yield sentence (15d):
but if Wh-Question Formation applies before Dative Movement, then

the resulting sentence is (15c). Focus Preposing will then apply to (15c), by moving the time adverb to the left and over the interrogative element, to yield question (15e). Similarly, Focus Preposing will apply to (15d), by moving the interrogative element to the beginning of the sentence, to derive sentence (15f). The remaining Kikongo question constructions, viz. (12 e-g) as well as the Kiswahili (13b-e) will be derived in the same fashion. In summary, what I am proposing here is that three syntactic rules are involved in the formation of the type of Wh-questions we have seen here: (1) Dative Movement, (2) Wh-Question Formation, and (3) Focus Preposing. Dative Movement and Wh-Question alone interact in the derivation of what I have called simple Wh-questions; and all three rules interact in the derivation of focused Wh-questions.

The question that naturally arises at this point is, how can I be certain that in those question constructions where the interrogative element occurs at the end of the sentence and after the adverb it is not the interrogative element that is moved rightward? My answer to this is that there is clear evidence in Swahili from sentences involving manner adverbs where such adverbs cannot be focus-preposed and where the occurrence of the interrogative element at the end of the sentence is prohibited. In such constructions, as can be seen from the examples in (16), the only permissible focused Wh-question construction is one in which the interrogative word occurs sentence-initially:

(16) Kiswahili

a. Asha a-li-wa-simul-i-a   wa-toto   hadithi   vizuri.
   Asha Ag-Pst-OP-tell-Ext-Suf. children   story   nicely/well
   (Asha told the children the story nicely/well.)

b. Asha a-li-wa-simul-i-a   NANI   hadithi vizuri?
   Asha told-to/for   WHO(M) story   nicely/well
   ((To) Whom did Asha tell the story nicely/well?)

c. Asha a-li-wa-simul-i-a hadithi NANI   vizuri?
                            story   WHO(M) nicely/well
   ((To) Whom, specifically, did Asha tell the story nicely/well?)

d. *Asha a-li-wa-simul-i-a hadithi vizuri NANI?

e. NANI Asha a-li-wa-simul-i-a hadithi vizuri?
   ((To) Whom, specifically, did Asha tell the story nicely/well?)

The same situation occurs when the direct object is questioned, thus the position of the noun being questioned here is irrelevant. The facts of

Kikongo with respect to this kind of construction are not so clear-cut, because while the movement of manner adverbs is prohibited just like in Kiswahili, one can 'get a grammatical sentence in which the interrogative word occurs at the end of the sentence and after the manner adverb. Such sentences, however, appear to be less acceptable than those in which the interrogative element precedes the manner adverb. This being the case and in terms of the consistency of the rest of the Kikongo facts with those of Kiswahili, the syntactic analysis I have presented here appears to me to be the most reasonable account of the facts under consideration.

Up to this point the analysis has been largely restricted to the syntactic aspect of Wh-Question Formation in Kikongo and Kiswahili. The presentation made thus far is essentially consonant with the standard theory of syntax (cf. Chomsky, 1965). There is, however, more to the focused Wh-questions in these languages than the apparent permutations of constituents; and if I were to stop here, I would have only accounted for half of the intuition that speakers of these languages bring to bear in the formation of interrogative word questions. I would, therefore, like to devote the remaing part of this section to a discussion of the semantic aspect of Wh-questions in these languages and its interaction with syntax.

The major function of language, it is generally agreed, is communication (cf. Weinreich, et al., 1968; Labov, 1970; among others). As such, language is more often than not used in social contexts; cases where language is used in isolation and for non-communicative purposes are relatively small and uninteresting. Questions in general, more than any other construction, are very much context oriented; this context is the discourse which may be defined as involving minimally the pairing of questions to answers. Because of this type of pairing, sentence fragments that would otherwise be considered as infinitely ambiguous, if not outright ungrammatical, can be made amenable to systematic interpretation. Consider in this respect, for instance, the following set of English sentences:

(17) English

    a. Where is Shaggydog?
    b. It is at home.
    c. (At) Home.

(18)   Who did Meta want to kill at the game reserve?

(19) a.   Meta wanted to kill himself, /*(myself, yourself, herself, etc.)

   b.   Meta$_i$ wanted to kill him$_j$./me, her, them, us, you, etc.

   c.   *Meta$_i$ wanted to kill him$_i$.

   d.   He$_i$ wanted to kill himself$_i$ /*(myself, yourself, herself, etc.)

   e. $\left\{ \begin{array}{l} \text{Himself} \\ \text{Me} \\ \text{You} \\ \text{Him}_j \\ \text{Us} \\ \text{Them} \end{array} \right\}$

   f.   *$\left\{ \begin{array}{l} \text{Myself} \\ \text{Yourself} \\ \text{Herself} \\ \text{Ourselves} \\ \text{Yourselves} \\ \text{Themselves} \end{array} \right\}$

(17b) is a full grammatical sentence in the sense that it includes mini-
mally a subject and a verb; if someone were to drop in on the conversa-
tion at the time (17b) is uttered, he would have no problem in assigning
an interpretation to it in the absence of (17a). (17c), however, is
infinitely ambiguous in the absence of (17a); but once the latter is
uttered and the former given as a response to it, the ambiguity disappears.
Further, in this question/answer context what would have otherwise been
considered as a sentence fragment or non-sentence is given the status of
sentencehood. There is another problem, besides ambiguity; and that is
the problem of correference illustrated by the examples in (19). English,
as many other natural languages, requires that the second occurrence of
a noun phrase within the same clause be changed into a reflexive pronoun
which corresponds in all feature specifications to the first NP. The
non-observance of this rule results in ungrammatical sentences like (19c).
As Morgan (1973: 725-26) points out, the ability of speakers to inter-
prete and accept fragments like (19e), on the one hand, and reject (19f),
on the other, crucially involves the reconstruction of the properties of
the full sentences containing such fragments. What this means is that
the listener must have access, in the case under discussion here, to both
sentence (19a) and its underlying structure. Now, if the examples in (19)

are viewed as answers to questions like (18), the fact that the respondent can interpret the type of sentence fragments illustrated in (19) strongly suggests that he makes a mental reconstruction of the structures underlying both (18) and (19a). In other words, the speaker refers back to previous lines of derivation. This kind of linguistic intuition, which we have to account for in accordance with Chomsky's (1965: 24) definition of grammatical descriptive adequacy quoted in (20) below, cannot be captured without violating the notion "sentence"and the requirement that T-rules cannot refer to previous lines of derivations:

(20) A grammar can be regarded as a theory of a language: it is <u>descrip-tively adequate</u> to the extent that it correctly describes the <u>in-trinsic competence</u> of the idealized native speaker. The structural descriptions assigned to sentences by the grammar, the distinctions that it makes between well-formed and deviant, and so on, must, for descriptive adequacy, correspond to the linguistic intuition of the native speaker (whether or not he may be immediately aware of this) in a substantial and significant class of crucial cases.

If we take (20) as axiomatic, as G. Lakoff (1973) and Morgan, for example, have done, then the notion "sentence" will either have to be redefined or rejected altogether in order for facts such as those under consideration here to be adequately accounted for.[5] I shall return to this point in section (2.0) below. In the meantime, it suffices to say that the kind of linguistic intuition that speakers of Kik<u>o</u>ngo and Kiswahili bring to bear on the formation of Wh-questions is analogous to the one that English speakers bring in interpreting sentence fragments like those in (17) and (19).

Let us reconsider more specifically some of the simple and focused Wh-questions presented above, the Kiswahili ones, for example:[6]

(21) a. Bakari a-na-wa-som-e-a wa-toto ki-tabu sasa.
       (Bakari is reading a/the book to/for the children now.)

   b. Bakari a-na-wa-som-e-a NANI ki-tabu sasa?
      ((To)/For whom is Bakari reading the book now?)

   c. Bakari a-na-wa-som-e-a ki-tabu NANI sasa?
      (To/For whom, specifically, is Bakari reading the book now?)

   d. Bakari a-na-wa-som-ea ki-tabu sasa NANI?
      (To/For whom else can Bakari be reading the book now?)

   e. NANI Bakari a-na-wa-som-e-a ki-tabu sasa?
      (To/For whom, specifically, is Bakari reading the book now?/
      To/For whom else can Bakari be reading the book now?)

f. Bakari a-na-wa-som-e-a wa-toto NINI sasa?
    (What is Bakari reading to/for the children now?)

g. Bakari a-na-wa-som-e-a NINI wa-toto sasa?
    (What, specifically, is Bakari reading to/for the children?)

h. Bakari a-na-wa-som-e-a wa-toto sasa NINI?
    (What else can Bakari be reading to/for the children now?)

i. NINI Bakari a-na-wa-som-e-a wa-toto sasa?
    (1. What, specifically, is Bakari reading to/for the children
    now? 2. Which reading, out of a set, is Bakari reading to/for
    children now?)

As stated previously, the simplest or most neutral Wh-question resulting
from questioning the indirect object in the structure underlying (21a)
is (21b); and the answer to this question can be either (21a) or the
equivalent of "some children." (21a) can also be an echo-question if
an echo type of intonation is placed on the interrogative word NANI.
Questions (21c, e), as their glosses indicate, involve additional pre-
suppositions that are now found in (21b) and cannot, therefore, accept
(21a) or any such vague statement as an appropriate reply. In particu-
lar, sentence (21c), where the interrogative element occurs to the right
of the direct object NP ki-tabu, implies that the questioner had already
asked (21b) and received a vague answer like (21a) or else a totally
incorrect one-word answer like: "ki-tabu." Wishing to get a more specific
answer, the questioner focus-preposes the NP kitabu next to the verb to
signal to the speaker (1) that he knows that Bakari is a reading a book
to some individuals, and (2) that he wants to know specifically, by names
or some other identity, who these individuals are. Similarly, (21e),
which is slightly ambiguous, is a follow-up question to either (21b) or
(21c) in that the speaker had asked one of these questions, but received
either no answer or a vague one from the respondent. Now, wishing to
make certain that the listener understand him once for all, the
questioner focus-preposes the interrogative element all the way to the
beginning of the sentences for maximum prominence. In addition to the
questioner's insistence on getting a specific response, the use of questions
like (21e), but not (21c), generally indicates disappointment with the
respondent in the sense that the questioner is either disatisfied with the
latter's "evasive" responses or that he is frustrated in being ignored by the
respondent. The answer to (21e) must be specific, e.g. a listing; (21a)

cannot serve as an appropriate answer to this question. Sentences like
(21e) and (21i), more than the other focused question constructions
(e.g. 21c,g),cannot be used appropriately as conversational starters,
because of the contextual restriction just discussed. That is, the use
of (21e,i) to initiate a conversation will be interpreted by the re-:
spondent as though he/she had already been asked questions like (21b,f)
and failed to respond satisfactorily, or else that the questioner is
annoyed with him/her for some reason. Questions (21d,e) are introspect-
ive and cannot, therefore, be answered. The explanation given here with
respect to the context and semantics of questions like (21b,c,e), where
an indirect object noun phrase is questioned, also holds for (21f,g,i),
where a direct object noun phrase is questioned. The facts of Kikongo
Wh-questions are also explanable in the same manner.

Clearly, the ability of the speakers of Kikongo and Kiswahili to use
and respond appropriately to questions like these cannot be character-
ized solely in terms of the syntactic rules and the semantic interpreta-
tion associated with these rules, but must also include in a crucial
way the pragmatic conditions dictated by the discourse as I have suggest-
ed all along. If constructions like Wh-questions, or questions in gene-
ral for that matter, are analyzed in terms of the discourse character-
ized by the pairing question/answer, rather than in terms of the single
utterance defined as the "sentence," we can more adequately and natural-
ly capture the relationship that holds between simple Wh-questions and
focused Wh-questions in languages like Kikongo and Kiswahili, on the
one hand; and between questions and their answers in general, on the
other. It is not by accident, for instance, that single word answers to
questions are always viewed by speakers as unambiguous. The generaliza-
tion here, as I have suggested earlier, is that questions precedes an-
swers and thereby establish a precedence relation with respect to the
latter; it is on this basis that sentence fragments serving as replies
to questions are easily interpretable. As Morgan (1973) and others
(cf. Pope, 1971, 1975; R. Lakoff, 1973) have convincingly argued, the
interpretation of sentence fragments involves the reconstruction of
both linguistic and non-linguistic contexts. This interpretation is
systematic because questions contain, explicitly or underlyingly,

fragments that can serve as answers to them; this relationship can be
defined at one level in terms of proper inclusion. The discourse con-
texts discussed with respect to the questions in (21) and this type of
proper inclusion relationship are what I would like to call, to borrow
Sanders' (1974), precedence relations.

2.0 THEORETICAL IMPLICATIONS AND CONCLUSIONS

The analysis proposed here has several theoretical and methodologi-
cal implications on linguistic research, especially syntax. I would
like to turn to this aspect of the problem now. My intention in this
discussion is not to propose a new theory of syntax, but rather to
question the wisdom of maintaining certain "basic" assumptions which
appear to me to be outdated and demonstrably invalid.

2.1 <u>Problems with the Notion Sentence & the Saussurian Paradox</u>:
The first theoretical problem that one encounters in analyzing phenomena
such as focused Wh-questions and others that require making reference
to previous derivations (cf. G. Lakoff, 1968, 1970, 1973; Morgan, 1973)
is that of the basic assumption that the sentence, as generally charac-
terizable by a P-Marker, is the proper domain of syntactic studies. The
consequence of this assumption is that T-rules cannot refer to previous
lines of derivation: they must be restricted to the structure defined
by an adjacent pair of P-Markers. This requirement and the notion sent-
ence itself, which incidently has never been precisely defined, follow
from the more general assumption that linguistic theory, as presently
pursued within the framework of generative-transformational grammar, is
a theory of competence but not of performance. The dichotomy between
linguistic competence and linguistic performance is founded on De
Saussure's (1966) approach to language.

De Saussure (1966: 8-9), after observing that speech has "both an
individual and social side" each of which cannot be conceived of with-
out the other, draws a distinction between these aspects of language:
he calls one <u>langage</u> and the other <u>langue</u>. De Saussure (1966) states
in this respect:

(22) As I see it there is only one solution to all the foregoing diffi-
culties [concerning the object of linguistic analysis]: <u>from the</u>
<u>very outset we must put both feet on the ground of language and</u>
<u>use language as the norm of all other manifestations of speech.</u>

> Actually, among so many dualities, language alone seems to lend it-
> self to independent definition and provides a fulcrum that satisfies
> the mind.
>   But what is language [langue]? It is not to be confused with
> human speech [langage], of which it is only a definite part, though
> certainly an essential one. It is both a social product of the faculty
> of speech and a collection of necessary conventions that have been
> adopted by a social body to permit individuals to exercise that
> faculty. Taken as a whole, speech is many-sided and heterogeneous;
> stradling several areas simultaneously--physical, physiological, and
> psychological--it belongs both to the individual and to society; we
> cannot put it into any category of human facts, for we cannot discover
> its unity.
>   Language, on the contrary, is a self-contained whole and a princi-
> ple of classification. As soon as we give language first place among
> the facts of speech, we introduce a natural order into a mass that
> lends itself to no other classification (De Saussure, 1966: 9).

The paradox here is that while linguistic knowledge can be sub-divided
into langue and language or what we know today as competence and perform-
ance at one level of analysis, these two aspects are parts of an organic
whole and cannot, therefore, be studied in isolation without losing an
enormous amount of regualr generalizations about language in general
(cf. Weinreich, Labov, and Herzog, 1968). Studies in vitro are character-
istic of all sciences in the experimental stages. Most linguists will
agree that the achievements which the generative-transformational appro-
ach has made over previous models and those that the field of linguistics
in general has made over other social sciences are largely due to Noam
Chomsky's narrow definition of the domain of linguistic studies.

    While studies which have been conducted within this narrowly defined
area of linguistic research, viz. linguistic competence, have been high-
ly valuable, there is a large body of linguistic data which call for an
examination of both competence and performance that cannot be accommo-
dated within this framework. The Wh-questions presented here are only
a small example of this type of data; many other similar facts have been
discussed elsewhere (cf. G. Lakoff, 1968, 1970, 1973; Weinreich, et al.,
1968; Labov, 1970; Morgan, 1973; etc.). Language, as everyone readily
acknowledges, serves as the main medium of communication among indivi-
duals and other societal institutions. The study of language in its
social context, contrary to De Saussure's (1966: 9) and Chomsky's (1964,
1965), is as systematic and fruitful as the study of language in isolation:

the work of Labov and other sociolinguists since the mid sixties stand
as a proof to this fact. What the present study and other previous
syntactic studies of this sort demonstrate is that certain linguistic
phenomena can best be studied only if (a) the discourse, as narrowly de-
fined above for example, is taken as the proper domain of such phenomena,
and (b) pragmatic factors are incorporated into linguistic theory. Ques-
tions, Topicalization, Dislocation, Adverb Preposing, and Pronominaliza-
tion (however this rule is analyzed) are some of the syntactic rules that
can be studied more profitably within this framework. Extending the
domain of syntactic studies to the discourse would obviate the need, it
seems to me, for global rules and trans-derivational contraints as well
as allow us to capture a number of significant generalizations that would
not otherwise be captured. If this proposal is accepted, then the requi-
rement that T-rules cannot refer to other derivations will have to be re-
jected, though the notion sentence needs not be.

2.2 <u>Syntactic Language Universals</u>. If the present study had been
conducted within the standard or extended theory of syntax, it would
have been possible to conclude erroneously, as I once did when I first
undertook the investigation, that Kikongo and Kiswahili have Wh-Question
movement rule. This conclusion is easy to arrive at on the basis of
syntax of Wh-questions in these languages unless one attempts to discover
the contexts in which various apparently syntactically related Wh-quest-
ions are used, and the different nuances they have. What the facts of
Wh-questions in Kikongo and Kiswahili clearly demonstrate is that one
cannot propose formal language universals in syntax on the basis of
surface facts without examining their underlying representations. This
is essentially what Baker (1970), Bresnan (1970), and Bach (1971) did
when they drew on Greenberg's (1963) tentative universals to propose
a Universal Wh-Q-Movement rule. This hypothesis, which I have shown
elsewhere (cf. Bokamba, 1976) to be untenable, states that if a language
has a Wh-Question Movement rule, the movement will always be to the left,
never to the right. While it is true that certain transformational rules
are known to occur in many of the world's languages (cf. Bach, 1965;
Schwartz, 1971; Koutsoudas, 1971), the exact form that such rules assume
in various languages still needs to be determined by extensive studies

of such languages. And until such studies are undertaken, there will be very little or no basis at all for making serious proposals about formal syntactic universals.

2.3 Conclusions. The analysis presented here integrates the traditional syntactico-semantic aspects of language and pragmatics in order to characterize more accurately the facts under study. In particular, I have made the following proposals: First, that Wh-questions in Kikongo and Kiswahili consist of two kinds of constructions: simple Wh-questions and focused Wh-questions, and involve no Wh-question movement rule in the traditional sense. Simple Wh-questions are analyzable in terms of a simple replacement process, whereas focused Wh-questions are derived from the former via what I have called Focus Preposing rule. In the course of the analysis I have shown that focused Wh-questions are both syntactically and semantically more complex than corresponding simple Wh-questions, and that they cannot be adequately characterized without making reference to (a) previous derivations, and (b) answers and other conversational factors. To the extent that this is correct, I have argued that the two basic assumptions concerning the proper domain of syntactic studies and that of linguistic theory must be abandoned or else revised. Second, in the light of this study and others before it, I have proposed that the notion discourse as herein defined be incorporated into syntactic theory as the proper domain of the study of a class of T-rules, and that certain aspects of linguistic performance be also so incorporated. This approach will make it possible to capture a number of significant generalizations that occur in natural languages, of which the data presented here is only a small part, when language is studied in context.

<center>FOOTNOTES</center>

[1]This construction, as will be seen later, is related to (5a) via Dative Movement.

[2]Another way of asking the same question would be to use the interrogative-word GANI "what" after the indefinite pronoun kitu "thing/something," as follows:

    Bakari a-na-wa-som-e-a wa-toto kitu gani?
    Bakari is-reading-to/for children thing what
    (What is Bakari reading to/for the children?)

[3]The corresponding facts in Kiswahili are as follows:
a) Juma a-li-wa-andik-i-a   wa-toto barua   jana.
    Juma Ag-TA-OP-write-Ext-Suf children letter yesterday
    (Juma wrote a/the letter to/for the children yesterday.)

b) Juma a-li-wa-andik-i-a   wa-toto, jana, barua.

    (Juma wrote a/the letter to/for the children yesterday, but not any
    other day.)

c. *Juma a-li-wa-andik-i-a wa-toto jana barua.

d. Juma a-li-wa-andik-i-a, jana, wa-toto barua.

    (Same meaning as (b) above, except much heavier stress on jana.)

e. *Juma a-li-wa-andik-i-a jana wa-toto barua.

f. Juma, jana, a-li-wa-andik-i-a wa-toto barua.
    (Just yesterday Juma wrote a/the letter to/for the children./
     Not a long ago Juma wrote a/the letter to/for the children.)

g. *Juma jana a-li-wa-andik-i-a wa-toto barua.

h. Jana (,) Juma a-li-wa-andik-i-a wa-toto barua.
    (Yesterday (,) Juma wrote a/the letter to/for the children.)

[4]I do not mean to imply here that subject-verb agreement precedes
Wh-Question Formation; since grammatical agreement is irrelevant to
problem under discussion here, I am simply ignoring it altogether.

[5]Another logically possible alternative would be to redefine the
notion sentence so as to incorporate trans-derivational constraints
as has been proposed elsewhere (cf. G. Lakoff, 1973; Morgan, 1973).
My feeling, however, is that the need for trans-derivational constraints
can be obviated if the notion sentence is rejected altogether; besides
the syntactic considerations that necessitate the rejection of this
narrowly defined domain of syntactic investigations, there is independent evidence from written speech and discourse which argue against
the maintenance of this notion as presently defined. The evidence is
that (1) coreference across entence boundaries in written speech
is as common as in spoken speech, particularly in dialogue; and (2)
instances of language use involving answers of some sort are characteristically context-oriented and involve "global" global references.

[6]There are other focused Wh-question constructions, for instance
cases where the adverb or an object noun phrase is focus-preposed; but
I will not illustrate them here as they add nothing new to the analysis.

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ON THE JUSTIFICATION FOR LANGUAGE-SPECIFIC SUB-GRAMMATICAL RELATIONS*

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This paper examines the syntactic behavior of a semantically and syntactically specifiable set of NP's in Olutsootso, a dialect of Luyia spoken in western Kenya and eastern Uganda, in an attempt to determine the grammatical relation such NP's play in sentences of the language. More specifically, this semantically and syntactically specifiable set of NP's consists of locative NP's taking as prefix one of three locative markers xu-, mu-, and ha-, meaning 'on', 'in', and 'near' respectively. The analyses of such locatives available to date in the literature, be they traditional or transformational in approach, classify them as prepositional phrases, not bearing any grammatical relation to the verb in the sentence. It is shown that such analyses are inadequate, and that these locatives constitute a semantically and syntactically distinct subrelation of the grammatical relation direct object.

Some information about Olutsootso morphology is useful at the beginning of the paper to help clarify the ensuing data. Olutsootso has typical Bantu morphological characteristics including noun classes which govern agreement on verbs for subjects and direct objects and on other grammatical elements such as relative pronouns, demonstratives and possessives. The verbal morphology consists of subject and object agreement prefixes as well as derivational verbal suffixes, among them the "applied" suffix -il/-el triggered in general by a benefactive, instrumental, or directional NP in the sentence, the passive suffix -u/-ibw, and the locative suffix -xwo/-mwo/-ho, each agreeing with one of the three locative markers mentioned in the first paragraph. The distribution of this locative suffix is of immediate relevance to this study, and will be taken up in detail later on in the paper.

The set of locatives investigated in this study, namely those which take one of the three locative markers xu-, mu-, and ha-, are to be distinguished from the non-term, prepositional phrase type locatives whose prepositions constitute separate words. Contrast, for example, the locative in (1), carrying the prefix xu-, with the locative prepositional phrases in (2) with the sequence of prepositions inyuma ya or imbeli ya, consisting

of two separate words each:

(1) jon   a   -tsi   -a   xu   -mu   -saala
     John   subject   -go   -tense(T) locative   class   -tree
            marker(SM)   marker(LM) marker(CM)3
     'John went on the tree.'

(2) jon   a   -tsi -a   {inyuma}   ya   omu   -saala
                              {imbeli}
     John   SM -go   -T   {behind }   of   CM3   -tree
                              {infront}
     'John went {behind   } the tree.'
                {in front of }

Evidence (more substantial than that provided by the orthographic
conventions of the language) for the non-prepositional status of the locative
markers xu-, mu-, and ha- comes from their not being subjected to a general
constraint in the language against prepositional standing. This constraint
is illustrated by the Relativization strategies in the language. Relative
clauses in Olutssootso appear after the head NP, beginning with a relative
pronoun generally agreeing in class with the head NP and in case marking
with the target of Relativization. In addition to the relative pronoun, a
pronominal copy of the target NP obligatorily appears after the preposition
in a relative clause formed on the object of a locative preposition, whereas
there is no such copy in a relative clause formed on a NP that is clearly
not preceded by a preposition and which cannot be analyzed as an object of
one. (3) constitutes an example of a relative clause formed on a prepositional
phrase type locative:

(3) in -zu   e   -yi   -a   jon a -tsi -a inyuma ya yiiyo
     CM9 -house relative -CM9 -RM   John SM -go -T behind of class
                 clause   (nonsubject)   (C)9
                 marker(RM)   demonstrative(D)
     'The tree which John goes behind...'

Note that without the demonstrative copy yiiyo following the prepositions
inyuma ya the relative clause would be ungrammatical. Relativization on
NP's that are not objects of prepositions, on the other hand, does not re-
quire this additional pronominal copy of the target of Relativization in
the relative clause. Examples (4) and (5) illustrate relative clauses

formed on subjects and direct objects respectively:

(4) aba-saatsa a -ba   -xol -a emi -limo...
   CM2-man RM -C2 SM -do -T CM4 -work
   'The men who do work...'

(5) aba -saatsa a -ba   -a en -dol -a...
   CM2 -man RM -C2 object -RM I -see -T
         marker(OM) (object)
   'The men whom I see...'

The non-prepositional phrase type locatives with the markers xu-, mu-, and ha- behave like regular non-prepositional phrase NP's in their choice of a Relativization strategy. Relativization of such locatives require no additional pronominal copy in the relative clause. The explanation is that these locatives do not include any prepositions so that their Relativization does not involve preposition standing, thus requiring no additional pronominal copy in the relative clause. Relative clauses formed on non-prepositional phrase NP locatives are illustrated in (6) and (7).

(6) mu -shi -iro o -mw -a jon a -leer -a eshi -tabo...
   LM -CM7 -market RM -LM -RM John SM -bring _T CM7 -book
   'In the market where John brings the books...'

(7) xuu -n -zu o -xw -a jon a -tsi -a...
   LM -CM9 -house RM -LM -RM John SM -go -T
   'On the house on-where John goes...'

We have shown that the morphological evidence indicating that NP locatives, unlike all the other prepositional phrase type locatives, are not prepositional phrases is strongly corroborated by syntactic evidence. Not being prepositions, xu-, mu-, and ha-, the locative markers on NP locatives should be considered as prefixes indicating case and/or grammatical relation. Exactly what the grammatical relation of these NP locatives is will be discussed later on in the paper.

   Locative NP's can be shown to be crucially different from prepositional phrase locatives in other respects as well. The nouns of the prepositional phrase locatives trigger class agreement on demonstrative pronominal forms, whereas the NP locatives govern locative marker agreement. Contrast, for example, the demonstrative constructions (8) and (9), which are formed on a prepositional phrase locative and a NP locative respectively:

(8) inyuma ya omu -saala yukwo...
   behind of CM3 -tree demonstrative(D) C3
   'Behind that tree there...'

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(9)  xu -mu   -saala  yu -xwo...
     on -CM3  -tree   D  -LM
     'On that tree on-there...'
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In (8) the demonstrative yukwo agrees with omu-saala 'tree' in noun class,
while in (9) the demonstrative yuxwo agrees with the locative class 17 marker
xu-. Similar agreement differences hold for relative pronouns formed on
prepositional phrase locatives and NP locatives. The relative pronoun
e-yi-a in (3), for example, being formed on a prepositional phrase locative,
agrees in class with the noun in-zu 'house', while the relative pronouns
o-mw-a in (6) and o-xw-a in (7), being formed on NP locatives, agree with
the locative classes 17 and 18 whose markers are mu- and xu- respectively.

It is interesting to note, however, that this difference in coding
procedure triggered by the two types of locatives in demonstratives and
relative pronouns does not extend to possessives. Possessive pronominal
forms for both types of locatives carry class agreement, as examples (10)
and (11) indicate:

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(10)  inyuma  ya  tsi -siimba  tsi  -anje...
      behind  of  CM10 -lion   CM10 -my
      'Behind my lions...'
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(11)  xu -tsi -siimba  tsi -anjle  /*xw -anje...
      on -CM10 -lion    CM10 -my     on  -my...
      'On my lions...'
```

Returning to the differences between NP locatives and prepositional
phrase locatives, another such difference concerns verbal agreement. NP
locatives, when in subject position, govern subject ·agreement, while preposi-
tional phrase locatives never do, (indicating perhaps, that the lattertype
cannot be promoted to subject position by any syntactic process(es) in the
language):

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(12)  xuu -n -zu       xu      -bal     -a
      LM  -CM -house   locative -be warm -T
                       (L) SM
      'It was warm on the house.'
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(13) *inyuma  ya  inzu      yi -bal     -a
      behind   of  CM9-house CM0 -bewarm -T
      ('It was warm behind the house.')
```

Though the locatives in both sentences appear in subject position, the verb
xu-bal-a in (12) agrees with the locative marker xuu-, whereas (13) is un-
grammatical even though the verb yi-bal-a agrees with the prepositions
inyuma ya and their object in-zu, both being of class 9.[1]

Having established that NP locatives, marked by the prefixes xu , mu-, and ha, are distinct from prepositional phrase locatives with respect to the coding properties they trigger in relative pronouns, demonstratives, and on verbs, and with respect to the relative clause formation strategies they employ, we go on to show that their behavior with respect to accessibility to syntactic processes such as Passivization, Tough Movement, Clitic Pronominalization, and Topicalization is also different: locative NP's are accessible to all these processes, while prepositional phrase locatives are not.

Passivization in Olutsootso generally applies to structures such as (14) to produce structures such as (15), thus promoting a direct object to subject status and demoting the underlying subject to chômeur status:

(14) jon a -leer -a eshi -tabo xulua mary
John SM -bring -T CM7 -book for Mary
'John brought the book for Mary.'

(15) eshi -tabo shi -leer -w -a xulua mary neende jon
CM7 -book ClSM -bring passive -T for Mary by John
marker(PM)
'The book was brought for Mary by John.'

Note that in (15) eshi-tabo the derived subject triggers class agreement on the verb. This rule of Passivization can also apply to sentences like (1) to produce passive structures like (16), where the NP locative has been promoted to subject status, triggering locative agreement on the verb:

(16) xu -mu -saala xu -tsii -bw -a -xwo neende jon
LM -CM3 -tree LSM -go -PM -T -locative by John
clitic(LC)
'On the tree was gone by John.'

Though NP locatives can undergo Passivization, and thus be promoted to subject status regardless of whether or not the verb in the sentence belongs to the class of transitive verbs "traditionally" considered to govern Passivization, prepositional phrase locatives cannot under any circumstances be passivized into subject position. The application of Passivization to a structure like (2), for example, yields an ungrammatical output (17):[2]

(17) *inyuma ya omu -saala yi -tsii -bw -a -ho neende jon
behind of CM3 -tree C9SM -go -PM -T -LC by John
('Behind the tree is gone by John.')

In the same manner locative NP's can be shown to undergo Tough Movement, whereas prepositional phrase locatives cannot. Tough Movement in

Olutsootso is generally restricted in domain to direct objects only, the adjectives <u>angu</u> 'light, easy' and <u>tinyu</u> 'hard' preceded by the copula <u>ni</u> serving as Tough Movement triggers. The presumed underlying structure is attested on the surface in sentences such as (18):

(18) oxu $_3$ -chama jon ni oxw -aangu
      CM15 -please John is CM15 -easy
      'To please John is easy.'

The Tough Moved version of (18) is (19); Tough Movement having raised the object of the embedded clause to matrix subject position:

(19) jon ni omw -aangu w -oxu -chama
      John is CM1 -easy   CM1 -CM15 -please
      'John is easy to please.'

Besides direct objects, NP locatives with the markers <u>xu-</u>, <u>mu-</u>, and <u>ha-</u> may undergo Tough Movement. Thus, for example, Tough Movement applies to (20) to yield (21):

(20) oxu -leera eshi -tabo mu -shi -iro   ni oxw -aangu
      CM15 -bring CM7 -book LM -CM7 -market is CM15 -easy
      'To bring a book in the market is easy.'

(21) mu -shi -iro   ni omw -aangu mw -oxu -leera -mwo eshi -tabo
      LM -CM7 -market is LM -easy LM -CM15 -bring -LC CM7 -book
      'In the market is easy to bring a book.'

It is not possible, however, to Tough Move prepositional phrase locatives, since this process would yield outputs with the prepositional phrase locative in matrix subject position. We have already noted that prepositional phrases cannot serve as subjects of sentences, so that one must exclude prepositional phrase locatives from the domain of the rules of Passivization as well as Tough Movement, possibly in terms of a general constraint on the language, restricting non-term prepositional phrases from assuming subject position. Given such a constraint, a sentence like (22), wherein a prepositional phrase locative has undergone Tough Movement to become subject, is ungrammatical:

(22) *inyuma ya in -zu   ni yi -angu yi -oxu -leera   eshi -tabo
      behind of CM9 -house is CM9 -easy CM9 -CM15 -bring-LC CM7 -book
      ('Behind the house is easy to bring a book.')

The third syntactic process to which NP locatives are accessible while the prepositional phrase type are not is a Pronominalization rule that deletes a NP, copying it in terms of a clitic pronoun attached onto the verb. This type of Clitic Pronominalization applies to direct objects such

as <u>eshi-tabo</u> in (14) to produce a sentence like (23):

(23) jon a -shi -leer -a xulua mary
      John SM -CM7 -bring -T for   Mary
      'John brings it for Mary.'

<u>eshi-tabo</u> the direct object is pronominalized into <u>-shi-</u> an object pronoun in
class agreement with its antecedent; <u>-shi-</u> then appears as a prefix on the
verb. A locative NP such as <u>mu-shi-iro</u> 'in the market' in a sentence like
(24) would be pronominalized into an agreeing locative pronoun <u>mwo</u> which like
the direct object pronoun is cliticized onto the verb, (but unlike the case
of the direct object, is cliticized as a suffix) to yield a sentence like (25):

(24) jon a -leer -a eshi -tabo mu -shi iro
      John SM -bring -T CM7 -book LM -CM7 market
      'John brings the book in the market.'

(25) jon a -leer -a -mwo eshi -tabo
      John SM -bring -T -LC CM7 -book
      'John brings the book (in) there.

Prepositional phrase locatives could not be pronominalized in the same way
as NP locatives without violating the general constraint against preposition
stranding. If the object of the preposition alone were pronominalized and
cliticized onto the verb, then the preposition would be stranded, resulting
in an ungrammatical sentence. The deletion of the preposition, however,
does not render the sentence any more grammatical than before. Thus Pro-
nominalization of the prepositional phrase locative in (2), for example, in
the form of a clitic on the verb, both with or without the deletion of the
stranded preposition, generates the ill-formed constructions in (26):

(26) *jon a -tsi -a -yiiyo (inyuma ya)
      John SM -go   -T -CM9 LC (behind of)
      ('John goes behind (it)')

The only way to pronominalize the prepositional phrase locative <u>inyuma ya</u>
<u>omu-saala</u> in (2) is (27), which is not a clitic-type Pronominalization:

(27) jon a -tsi -a inyuma ya yu -kwo
      John SM -go   -T behind of D -C3
      'John goes behind it.'

     Another syntactic process to which NP locatives, contrary to prepositional
phrase locatives, are accessible is Topicalization. Topicalization in
Olutsootso applies on a post verbal NP, moving it to the left of the sentence,
inserting after it a demonstrative pronominal element in agreement with it,
and attaching as a prefix to the verb an object marker in agreement with the

Topicalized NP.[4] To illustrate, in (28) the direct object <u>aba-ana</u> 'child'
and in (29) the NP locative <u>mu-shi-iro</u> 'in the market' are Topicalized:

    (28) aba -ana   yaabo e(m) -ba   -lol ·-a
           CM2 -child   C2D I -them -see   -T
           'Those children... those children, I see them.'

    (29) mu -shi -iro   yumwo jon a -mu.   -leer -a -mwo eshi tabo
           LM -CM7 -market LD   John SM -L object -bring -T -LC CM7 book
                                    marker (OM)
           .'In the market, John brings the book (in) there.'

Sentence (29) indicates that Topicalization bestows on the topicalized NP
some object-like properties--at least, in as far as verbal marking is con-
cerned. Such phenomena tempts one to speculate that Topicalization in
this language perhaps involves a promotional step, such that the Topicalized
Np is promoted to direct object position, at least with respect ot coding
properties, and possibly with respect to some behavioral properties as
well.[5] This is why in (29) the topicalized NP locative <u>mu-shi-iro</u> 'in
the market' triggers both an object marker prefix and a locative clitic as
a suffix on the verb.[6] In any case, a prepositional phrase locative, un-
like the NP locative, cannot undergo Topicalization, as (30) indicates:

    (30) *inyuma ya omu -saala yukwo jon a -mu -leer -a -yukwo eshi -tabo
         behind of CM3 -tree   C3D John SM -C3OM-bring -T -C3D CM7 -book
         ('Behind the tree, John brings the book there.')

We have thus far shown that in coding as well as behavioral properties
NP locatives stand distinctly apart from prepositional phrase locatives.
Furthermore, it has become apparent from their behavioral properties in
terms of accessibility to certain syntactic rules (whether the rules directly
effect grammatical relations or whether they are sensitive to them in some
way) that NP locatives share many behavioral characteristics with direct
objects--properties not shared by other grammatical relations in the ·
language.[7] It can be shown, for example, that besides the NP locatives in
question, only direct objects (both derived and basic) can undergo the
relation-changing rules of Passivization and Tough Movement to be promoted
to subject position.[8]

    It has been shown in examples (15) and (16) that Passivization can apply
to direct objects and NP locatives respectively. It must be noted that in
the case of NP locatives the verb governing Passivization is a directional
intransitive verb, rather than a transitive verb, which usually governs

this rule. A number of directional intransitive verbs in Olutsootso govern
Passivization, with some exceptions, among them -its 'come', for example,
whose passive version sounds "funny" to native speakers.[9] In order to
substantiate the claim that only direct objects and NP locatives undergo
Passivization, one has to show that Passivization does not apply to indirect
objects. Indeed, the Passivization of the indirect object mary in (14),
for example, yields the ungrammatical constructions in (31):

   (31) *mary -a -leer -w -a eshi -tabo (xulua)[10] neende jon
        Mary SM -bring -PM -T CM7 -book (for)   by   John
        ('Mary is brought the book by John.')

However, if the indirect object mary in (14) is promoted to direct object
position prior to Passivization, then Passivization yields a grammatical
sentence. Though we do not provide irrefutable evidence for the derivation
of sentences like (32) from those like (14), there is reason to believe that
there exists a productive process in Olutsootso, somewhat equivalent to
Dative Movement, whereby an "applied" suffix (-il/-el) is attached onto
the verb making it benefactive, instrumental, or directional, the
case marker denoting benefactive, instrumental, or directional is deleted,
and the NP whose marker has been deleted is moved to direct object position.
The Dative Movement rule would apply to (14), for example, to produce (32):[12]

   (32) jon a -leer -el   -a mary eshi -tabo
        John SM -bring -applied -T Mary CM7 -book
                 marker(AM)
        'John brings Mary the book.'

mary in (32), being a direct object, is accessible to Passivization, as
shown in (33), while eshi-tabo the ex-direct object which has been demoted
to chômeur status is inaccessible to the rule. This turns out to be indeed
the case, as indicated by the ungrammatical (34) where eshi-tabo has been
Passivized:

   (33) mary a -leer -el -w -a -eshi -tabo neende jon
        Mary SM -bring -AM -PM-T -CM7 -book   by   John
        'Mary is brought the book by John.'
   (34) *eshi -tabo shi -leer -el -w -a mary neende jon[13]
        CM7 -book CM7 -bring -AM -PM -T Mary by   John
        ('The book is brought Mary by John.')

    Having established one behavioral characteristic, involving accessi-
bility to Passivization, shared by only the NP locatives and the direct
objects in Olutsootso, the next step is to bring out other such properties

exclusively shared by the two relations. Tough Movement is another process
that demonstrates such behavior. We have already shown in an earlier part
of this paper that direct objects and NP locatives can undergo Tough Move-
ment, whereas prepositional phrase locatives cannot; see sentences (19), (21),
and (22) respectively. In order to establish that only direct objects and
NP locatives can be promoted to become the subject of a higher clause, it
is sufficient to show that indirect objects cannot undergo Tough Movement.[14]
Consider sentence (35):

> (35) oxu -leera eshi -tabo xulua mary ni oxw -aangu
>   CM15 -bring CM7 -book for Mary is CM15 -easy
>   'To bring a book for Mary is easy.'

The Tough Moved version of (35) is the ungrammatical (36):

> (36) *mary ni omw -aangu w -oxu -leera (xulua)[15] eshi -tabo
>   Mary is CM1 -easy CM1 -CM15 -bring (for)   CM7 -book
>   ('Mary is easy to bring a book for.')

(37), however, a paraphrase of (35), where <u>mary</u> is the direct object of
a benefactive "applied" form of the verb <u>leer</u> 'bring', can be Tough Moved
to produce the grammatical (38):

> (37) oxu -leer -ela mary eshi -tabo ni oxw -aangu
>   CM15 -bring -AM Mary CM7 -book is CM15 -easy
>   'To bring Mary a book is easy.'

> (38) mary ni omw -aangu w -oxu -leer -ela eshi -tabo
>   Mary is CM1 -easy CM1 -CM15 -bring -AM CM7 -book
>   'Mary is easy to bring a book to/for.'

Besides the relation-changing rules of Passivization and Tough
Movement, there are syntactic processes which, though not relation-changing,
are sensitive to grammatical relations, effecting in similar ways direct
objects and NP locatives only. Two such syntactic processes are Pronominal-
ization and Relativization.

Clitic Pronominalization has been shown to apply to direct objects and
NP locatives in sentences (23) and (25) respectively, but not to preposition-
al phrase locatives, as illustrated by sentence (26). It remains to be
shown that Clitic pronominalization does not apply to indirect objects
either, so as to establish that the behavioral properties of NP locatives
and direct objects in Clitic Pronominalization are not only similar, but
also that they are not shared by other grammatical relations and non-terms
in the language.[15] Clitic Pronominalization, if applied to the indirect
object <u>mary</u> in (14), would yield the ungrammatical (39):

(39) *jon a -mu -leer -a eshi -tabo (xulua)[17]
John SM -DM -bring -T CM7 -book (for)
('John brought for her a book.')

We can show that even if the preposition is not stranded (as it is in (39)),
the indirect object is still not acceptable to Clitic Pronominalization. By
adding the demonstrative wuuwo 'that one (person)' after xulua, we have
prevented the standing of the preposition; but the sentence, with the in-
direct object cliticized onto the verb, is still ungrammatical:

(40) *jon a -mu -leer -a eshi -tabo xulua wuuwo
John SM -DM -bring -T CM7 -book for Cl-D
('John brought her_a book for her.')

    The argument involving Relativization follows along the lines of the
Clitic Pronominalization argument. Having shown two different Relativization
strategies, one for prepositional phrases and the other for NP's, due to
the constraint against preposition standing, one expects indirect objects
to be relativized by the strategy used for prepositional phrases, since the
indirect object case markers appears in front of the indirect objects in
the form of a separate word.[18] Indeed, unlike the direct objects and the
NP locatives, the indirect objects, require a pronominal copy of the target
NP when relativized, so that the relative clause would be ungrammatical
without it:[19]

(41) *aba -saatsa a -ba -a en -leer -a eshi -tabo (xulua)...
CM2 -man RM -C2M-RM I -bring -T CM7 -book (for)
('The men for whom I bring the books...')

We have seen, therefore, that direct objects and locative NP's use a
different Relativizing strategy than that used by indirect objects and
other prepositional phrases. In order to completely distinguish direct
objects and NP locatives as one set, different from all other grammatical
relations with respect to Relativization, the Relativization strategy used
for subjects remains to be examined. Relativization of subjects involves
a strategy slightly different from that which is used for direct objects
and NP locatives, the difference being that in the former, the relative
pronoun has only one relative marker affix on it, as example (42) indicates:

(42) aba -saatsa a -ba -xol -a emi -limo...
CM2 -man RM -C2SM -do -T CM4 -work
'The men who work...'

    Thus locatives and direct objects are set apart from other NP's
with respect to the rules of Relativization and Clitic Pronominalization,

which are sensitive to grammatical relations, as well as with respect to
relation-changing rules such as Passivization and Tough Movement, making
imperative an analysis which accounts for the similarities between the two.
Any analysis that sets apart NP locatives from direct objects, as different
grammatical relations (or categories totally distinct from each other,
misses the generalization that the NP locatives undergo the same relation-
changing processes (Passivization and Tough Movement) that underlying and
derived direct objects do. Such an analysis would also miss the general-
ization that the two relations/categories employ the same strategies for
(each of) the Relativization and Pronominalization processes, as opposed
to subjects, on the one hand, and as opposed to other grammatical relations
like indirect objects, etc. on the other.

The commonly accepted analysis (e.g. Trithart, 1975) that such NP
locatives, typically found in Bantu languages, are prepositional phrases
not only misses the above generalizations, but also violates the Universal
Subjectivization Constraint (Johnson, 1974), and questions its universality.
The Universal Subjectivization Constraint states:

(43)   If a certain position on the Relational Hierarchy[20]
       subject > direct object > indirect object > non-term
       undergoes a subjectivization rule, than all non-subject
       positions above it on the Relational Hierarchy must be
       able to undergo that rule.

An analysis wherein the NP locatives are considered to be prepositional
phrases would necessarily violate (43). As prepositional phrases, such
NP locatives would be included under non-terms, forcing an analysis that
allows for some non-terms and direct objects only to subjectivize via
Passivization and Tough Movement, thus leaving a gap of non-subjectiviz-
able NP's on the Relational Hierarchy over the range of indirect objects--
indirect objects not being directly accessible to these rules. Such an
analysis would either have to reject altogether the Universal Subjectiviz-
ation Constraint as invalid, or resort to some ad hoc revision of it (e.g.
Trithart, 1975[21]).

Evidence has been provided in terms of behavior with respect to rela-
tion-changing rules, and from rules which are sensitive to grammatical
relations, to suggest that NP locatives have the same grammatical relation
to the verb as direct objects do. On the other hand, there is also

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evidence suggesting that NP locatives and direct objects are distinct from each other.

One such evidence is the fact that NP locatives and direct objects trigger different coding processes. First of all, a relative pronoun formed on a direct object agrees with the class of the head NP, whereas a relative pronoun formed on a NP locative agrees with the locative marker of the head NP. Contrast examples (5) with (6) and (7). The same discrepancy in agreement behavior can be found in verbal agreement triggered by a direct object and that triggered by a NP locative, once they are subjectivized as in passive sentences. A subjectivized direct object triggers class agreement on the verb whereas a subjectivized NP locative triggers verbal agreement with the locative marker.[22] Contrast example (15) with (16). Another difference between the two is that Clitic Pronominalization involves the appearance of a verbal agreement prefix for direct objects, whereas the verbal agreement for NP locatives is in the form of a suffix, as shown in (23) and (25) respectively.

There exists another major coding difference between direct objects and NP locatives. A NP locative leaves a locative clitic on its verb, if it undergoes a change in grammatical relation, whereas a direct object leaves no clitic on its verb when undergoing a change in grammatical relation. Contrast the subjectivized direct object and NP locative in the passive sentences (15) and (16) respectively. The verb in (15) shi-leer-w-a is made up of the subject marker, followed by the verb stem, the passive suffix, and the tense marker. The verb in (16) xu-tsii-bw-ə-xwo has one suffix in addition to the elements found in the verb in (15), namely -xwo, a locative clitic indicating the underlying grammatical relation of the subject. The same phenomenon is true of NP locatives when subjectivized via Tough Movement, as sentence (21) shows. The embedded verb in (21) carries a locative clitic -mwo indicating the underlying grammatical relation of the matrix subject with the embedded verb.

Besides the above differences in the coding properties they trigger, there is another not less substantial argument for considering direct objects and NP locatives as distinct relations, despite their main similarities. There is sufficient motivation for positing a rule of Locative Marker Deletion

in Olutsootso, whereby a NP locative is transformed into a direct object.
The immediate output of this rule is not attested in the language, so that
such an output serves as an intermediate structure for rules such as
Pronominalization, Relativization, Topicalization, Passivization, and Tough
Movement, which treat the NP locatives whose markers have been "stripped off"
as if they were direct objects.

Clitic Pronominalization of mu-shi-iro in (24), results in (25) and
a syntactic variant of it--(44), where the clitic pronoun is in form of an
object pronoun reflecting class agreement with shi-iro, thus indicating that
shi-iro has become the object, probably at a stage in the derivation prior
to Clitic Pronominalization. In addition, there is a locative clitic -mwo
on the verb, indicating that the underlying NP locative has undergone
some change in grammatical relation.

(44) jon   a -shi   -leer -a   mwo ebi -tabo[23]
      John SM -C7OM -bring -T -LC   CM8 -books
      'John brings the books in it.'

Likewise, Relativization of NP locatives as in (6) and (7) have
syntactic variants wherein the locative markers have been ·deleted· from the
NP locatives, so that the relative pronoun includes an object marker agree-
ing in class with the "stripped" NP, and the verb has a locative clitic
attached to it, indicating a change in the grammatical relation borne by
the target of Relativization. The syntactic variants of (6) and (7) are
(45) and (46) respectively:

(45) eshi -iro   e -shy -a   jon a -leer -a -mwo eshi -tabo...
      CM7 -market RM -C7M _RM   John SM -bring -T -LC CM7 -book
                          (object)
      'The market which John brings a book in'...

(46) in -zu·   e -yi -a   jon a -tsi -a   -xwo...
      CM9 -house RM -C9M -RM   John SM -go -T   -LC
                       (object)
      'The house which John ·goes on...'

Topicalized locative NP's as in (29) were hypothesized earlier in the
paper to have undergone objectivization, even without being "stripped" of
their locative markers, so that they trigger object agreement and leave a
locative clitic on the verb, indicating that they have undergone a change
in grammatical· relation. Sentences like (29) have their syntactic variants
in sentences such as (47), where the Topicalized NP locative, "stripped off"

of its locative marker, is clearly a direct object, triggering object agreement and leaving a locative clitic on the verb indicating that the locative NP has undergone a change in grammatical relation:

(47) eshi -iro   yiisho jon a -shi -leer -a -mwo eshi -tabo
      CM7 -market C7D   John SM-C7OM -bring -T -LC CM7 -book
      'That market John brings the book in it.'

Passive and Tough Moved sentences with NP locatives as subjects also have syntactic variants in which the subjectivized NP's are "stripped off" of their locative markers, the verbs agreeing with them in class, as with subjectivized direct objects. Thus, for example, the passive (16) has a variant in (48), while the Tough Moved (21) has its variant in (49):

(48) omu -saala ku -tsii -bw -a -xwo neende jon
      CM3 -tree   C3SM -go   -PM -T LC   by   John
      'The tree was gone on by John.'

(49) eshi -iro   ni eshi -aangu shi -oxu -leer -a -mwo eshi -tabo
      CM7 -market is CM7 -easy CM7 -CM15-bring -T -LC CM7 -book
      'The market is easy to bring a book in.'

It should be clear, then, that NP locatives are different from direct objects, not only because they have different coding properties from those of direct objects, but also because NP locatives can be transformed into direct objects by "stripping off" their locative markers, as the above data has shown.[24]

An analysis which provides the basis for capturing the generalization that direct objects and NP locatives share certain behavioral properties and which at the same time allows for differences in coding properties, can only be one wherein NP locatives and direct objects constitute distinct subrelations within a single but broader grammatical relation which we shall call "supra direct objects" simply for lack of a better term.[25]

There are other works (e.g. Sheintuch, 1976) which show the need for a finer subclassification of grammatical relations for certain languages. Such language-specific sub-grammatical relations are generally semantically specifiable, basic (as opposed to derived) grammatical relations. Further investigation of grammatical relations in various languages should clarify whether such language-specific subrelations are motivated and governed by universal principles, and if so, an attempt should be made towards the discovery of such principles.

Footnotes

*We wish to convey our special thanks to Charles Kisseberth for helpful discussions and comments. This research was supported in part by NSF grant SOC 75-0024.

[1]Though not a noun, _inyuma ya_ resembles a class 9 word _inyuma_ followed by the class 9 associative marker _y-a_, so that if it would at all trigger subject agreement, it would be in the form of the prefix _yi-_.

[2]Note that earlier we cited (13) to demonstrate that prepositional phrase locatives cannot control subject agreement in a sentence; (17), then, would simply serve as another such example.

[3]CM15 is the infinitive marker.

[4]Due to the constraint against preposition standing, only non-prepositional phrase NP's are eligible for Topicalization; thus chômeurs resulting from the equivalent of the English Dative Movement (ex-direct objects) can undergo Topicalization, while those resulting from Passivization (ex-subjects), being prededed by the preposition _neende_, cannot.

[5]The justification for analyzing Topicalization as a promotion rule in Olutsootso, though a very interesting issue, will not be taken up in this paper, due to its rather marginal relevance to the topic as weighed against its complexity.

[6]We will show later on in the paper that the appearance of a locative clitic as a suffix on a verb indicates that the NP locative in the sentence has undergone a change in grammatical relation.

[7]We are assuming Postal and Perlmutter's (unpublished lectures) classification of grammatical relations to be correct, so that the possible universal grammatical relations are subject, direct object, and indirect object, with all other NP's being non-terms--either oblique ones which were never terms at any stage of the derivation of the sentence, or chômeurs which held a grammatical relation to the verb only at some earlier stage of the derivation of the sentence.

[8]In Olutsootso there are some verbs that take double objects, one or the other of which is generally more accessible to certain processes. The exact basis on which the grammatical relations of the two objects of a given verb are determined is not of any immediate concern in this paper.

[9]See Dalgish (1976) for a more complete list of directional intransitive verbs governing Passivization in this language.

[10]Notice that the sentence is still ungrammatical if the preposition _xulua_ meaning 'for' is deleted, so that the ungrammaticality of (31) is not due to a violation of the constraint against preposition stranding.

[11]This type of proposal is made by Kimenyi (1976) and Givon (1976) for the promotion of indirect objects "datives" in Givon's terminology) and of instrumentals in the Bantu languages of Ki Nyanuanda and Bemba, which are of course related to Olutsootso.

[12]It is neither within the scope nor within the goals of this research to show whether the structure in (32) is a derived or underlying one--that

is to say whether or not there exists a rule of Dative Movement in the lang-
uage. The arguments for and against either position are not decisive and
clear-cut. In any case, it should be made clear that the absence of a rule
of Dative Movement does not effect our argument in any crucial way. Without
the Dative Movement analysis, (31) would still be ungrammatical because mary
an indirect object has been passivized. In (33), on the other hand, mary
would be considered as a basic direct object, undergoing Passivization to
yield a grammatical output. However, we strongly suspect that the analysis
which postulates a rule of Dative Movement is more motivated; so for the
purposes of this paper we shall assume such a rule to exist.

[13]Please note that whereas such sentences are ill-formed in Olutsootso
and in Chi-mwini, they are grammatical in other Bantu languages such as
Swahili and Ki-meru, for example.

[14]Indirect objects are nevertheless objects of prepositions. In
order to show that only direct objects can undergo Tough Movement, one
should test the objects of double object verbs. The behavior of such double
object constructions is complex, and though if properly analyzed, it could
shed some light on the issue, such an analysis has not yet been conducted
by us.

[15]See footnote 10.

[16]It is unnecessary to check Clitic Pronominalization of subjects for
its similarities to and differences from Clitic Pronominalization of direct
objects and NP locatives, because the appearance of a subject clitic pronoun
(an agreement marker) on the verb is obligatory in all Olutsootso non-
imperative sentences, so that the Prononunalization of a subject would simply
involve its deletion.

[17]See footnote 10.

[18]Charles Kisseberth, (correctly) pointed out to us that datives like
xulua NP, being prepositional phrases, are expected to behave like all other
prepositional phrases in the language. In order to distinguish direct objects
from other objects of the language, one's attention has to be focussed
primarily on unmarked NP's. The lack of distinction between marked and un-
marked objects, therefore, reflects one of the limitations of Postal and
Perlmutter's theory of Relational Grammar.

[19]The grammatical version for (41) would be:

   (i)   aba -saatsa a -ba -a en -deer -a eshi -tabo xulua ya -abo
         CM2 -men   RM -CM2 -RM I -bring-T CM7 -book for D -CM2
         'The men for whom I bring the books...'
where a pronoun, demonstrative copy yaabo 'they (class2)' appears after the
preposition.

[20]The Relational Hierarchy, which roughly correlates with Keenan and
Comrie's (to appear) NP Accessibility Hierarchy, ranks the relations in such
a way (with subjects in the highest position), as to enable the formulation
of linguistic universals using the hierarchy, the constraint in (43) con-
stituting such an example.

[21]Trithart's Revised Subjectivization Constraint is circular:

(i) If a language can subjectivize an NP low in the Relational
     Hierarchy, then it can subjectivize NP's in all intermediate
     positions, where subjectivizable is defined recursively as
     follows:
     a) X is subjectivizable if L has a rule X → Subject
     b) X is subjectivizable if L has a rule → Y, where Y is
         subjectivizable.

[22] Note that it is possible to analyze the locative marker as a class
prefix, so that the coding processes for NP locatives and direct objects
would appear to be similar. However, it can be shown that the locative NP
has a class prefix of its own, other than the locative marker, which must
under the circumstances, be interpreted as a case marker. There are sen-
tences in which the locative NP can be separated from its locative prefix,
and then undergo the rules discussed above. When this happens, all agree-
ment is with the NP, and not with the locative marker. See Dalgish 1976b for
some examples. Also, see the discussion, following in the text.

[23] The object ebi-tabo 'books' is substituted for eshi-tabo 'book' simply
to eliminate the possibility that the C70M would be "agreeing" 'with book',
and not -shi-iro (class 7) 'market'. If the OM in (44) were agreeing with
'books', the C80M -bi would appear on the verb, instead of the -shi C70M,
which does occur.

[24] Note that prepositional phrase locatives, unlike NP locatives, cannot
be "stripped off" of their prepositions due to the general constraint against
preposition standing.

[25] There seems to be one type of counterexample, indicating that NP
locatives can also be underlying subjects, as shown by the lack of appear-
ance on the verb of the locative clitic which designates that the NP locative
has undergone a change in grammatical relation. See, for example, (i):

(i) xuu -n -zu   xu -bal   -a
     LM -CM9-house LSM -be warm -T
     'On the house was warm.'

Though we admit that we have not looked into this matter carefully, we offer
a suggestion of what may be happening here. Based on the observation that
the equivalent of such sentences in English and many other languages are
generally either subjectless or have a dummy element (e.g. it, in English)
for subject, as (ii) demonstrates:

(ii) It was warm in the house.

we speculate that sentences such as (i) are underlyingly subjectless, and
that the NP locatives have been promoted to subject position via a once
productive syntactic process, triggering a locative clitic on the verb.
Historically, however, this process might have lost its productiveness so
that the output pattern is no longer recognized as derived, but basic
causing the gradual loss of the locative clitic on the verb. One could also
postulate that the clitic appears only when the locative assumes a grammatical
relation which was previously "filled". In any case, more research must be
devoted to this matter before any conclusions can be drawn.

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OBJECT RELATIONS IN KIMERU CAUSATIVES [1]

Kathryn Speed Hodges

In Kimeru, a language of Eastern Kenya[2], a verb may be followed by one or more unmarked NP objects. It will be demonstrated that these unmarked NPs each possess the characteristics of a direct object, which poses a problem for a theory of grammar based on relational hierarchies. It will be argued that the category of object can possess a hierarchy internal to itself to which causative clause unions are sensitive.

The theories of grammar alluded to here are those commonly clustered under the heading "relational grammar", which was formally introduced by Postal and Perlmutter (1974) and later expanded by Keenan and Comrie (forthcoming), and others. The theory takes as basic the terms "subject", "object" and "indirect object", instead of the categories "NP", "VP", etc., as in traditional transformational grammar. These terms represent relations that an NP may have to a V, and rules that change relations may refer directly to them.

The Keenan-Comrie Accessibility Hierarchy (Keenan and Comrie, forthcoming) claims that if relation changing rules apply to less accessible NPs, then they will also apply to more accessible NPs. Subjects are universally more accessible than direct objects (DO), which are in turn more accessible than indirect objects (IO). Finally, the various "oblique categories" - locatives, possessive phrases, agents of passives - are the least accessible of all. Thus, if passive is stated as a rule that promotes a term to subjecthood and it operates on IOs in a given language, it should be the case that DOs undergo passive also.

Along with this hierarchy, in the early literature, go laws such as "the relational annihilation law" (Postal and Perlmutter, 1974). This states that the promotion of a term to a higher slot on the accessibility hierarchy (AH) will be accompanied by the demotion of the NP that originally held that relation to the bottom of the AH. It can then bear no relations to the verb

(becomes a chomeur). In English, the underlying subject of a passive is demoted to a "by" phrase and is no longer available for promotion by any subsequent application of passivization, or any other rule referring to terms. Early claims (Postal and Perlmutter, 1974) also stated that each sentence has just one S, DO or IO.

CLAUSE UNION

There has been a tendency to analyze causatives, in languages with productive morphological causative constructions, as containing a higher verb of causation which unites with a verb in a lower complement sentence (Comrie, 1976). The immediate problem if the lower clause is to combined with the higher, is what relation to assign the lower clause subject (LS), since two subjects are generally disallowed. Comrie's paradigm case (1976) claims that clause union will be sensitive to the AH.

The displaced subject will move down the AH, taking the highest relational position possible. Since DO is the next highest term after subject, the LS will attempt to move into DO position. If the LS finds the DO position empty, it can take on this relation and will appear as a DO. This is the case for intransitives, giving the appearance in the surface sentence that the intransitive verb has received an object. If the lower sentence has a DO (LDO), then the LS will find the DO position filled. In the ideal case, the LS will move one step lower on the AH and become an IO. If both positions are filled, the LS will become an oblique NP or will be deleted from the sentence.

Needless to say, counterexamples have arisen to various aspects of this strong statement. In particular, Bantu languages often provide difficulties since in many of them it is not apparent which NP following the verb should be considered the DO and which the IO. In traditional analyses of some Bantu languages, this question was avoided by calling the NP closest to the verb, and which controlled the object prefix on the verb, the primary object. The NP following it was called the secondary object (Doke, 1935). The problem seems to center in the counter-

I.
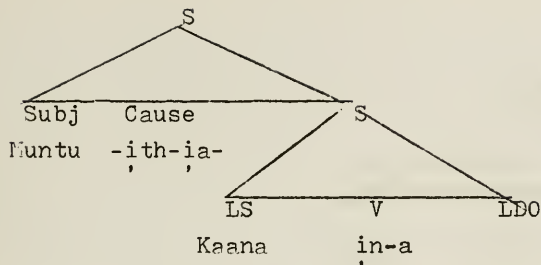
As would be expected, the causative allows two objects to follow transitive verbs that normally take only one object:

    2. a. *Muntu ni-a-k-ung-ag-a aritwa mwere
         Person Ag-T-weed-T   students millet
        *The person was weeding the students millet.

      b. Muntu ni-a-k-ung-ith-ag-i-a aritwa mwere.
        Person Ag-T-weed-Č - T--Č students millet
        The person was making the students weed millet.

      c. *Ni-a-tum-ag-a kaana nguo.[7]
         Ag-sew-T   child clothes
        He sews the child clothes.

      d. Ni-a-tum-ith-ir-ie kaana nguo.
         Ag-sew-Č---T--C child clothes
        He caused the child to sew clothes.

But the language will not permit three NPs to follow the verb even in causatives combined with inherently two-object verbs:

    3. a. Muntu ne-a-ritan-ag-a kaana kiswahili.
        Person Ag-teach-T   child Swahili
        The person teaches Swahili to the child.

      b. *Muntu ne-a-ritan-ith-ag-i-a kaana muka kiswahili.
        Person Ag-teach-Č - T - Č child woman Swahili
        The person causes the child to teach Swahili to
          the woman.

If the causatives followed by two NPs are analyzed as deriving from a bisentential source, then the NP immediately following the verb can be understood as the LS (subject of a lower S) and the second NP can be understood as the LDO (object of the lower S).

II.

```
                      S
              /            \
         /          \         S
      Subj     Cause      /  |  \
                         /   |    \
     Muntu   -į̈th-į̈-a  /     |      \
                      LS     V       LDO

              arį̈twa   -ung-a   mwere
```
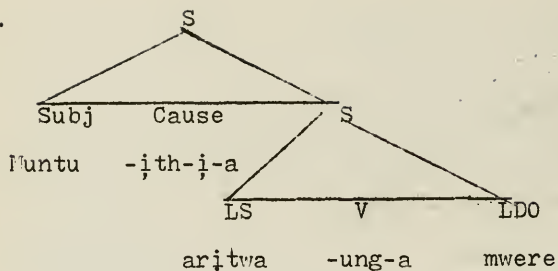
In fact, it is the normal case that the LS - or causee -
immediately follows the verb. Additional examples follow:

   4. a. Muntu ni-a-ku-rųg-į̈th-ag-į̈-a muka yo.
       .Person Ag-T-cook-C - T - C woman it
       The person was making the woman cook it (i.e.animal).

     b. ?Muntu ni-a-ku-rųg-į̈th-ag-į̈-a yo muka.
       Person Ag-T-cook-C - T -C it woman
      ?The person was making it (i.e.animal) cook the woman.

     c. Muntu ni-a-gur-į̈th-ag-į̈-a sukulu yųkų. [8]
       Person Ag-buy-C - T -C school book
      The person causes the school to buy books.

     d. ?Muntu ne-a-gur-į̈th-ag-į̈-a yųkų sukulu.
       Person .Ag-buy-C - T -C book school
      ?The person causes the books to buy the school.

The sentences in (4b) and (4d) can only be understood with
the bizarre readings that accompany them. The NP immediately
following the verb must be understood as an LS - it cannot be
read as an LDO even to save the sentence from anomaly. Example
(5) is a case with two human actors and shows that reversing
the order reverses the meaning:

   5. a. John ni-a-ku-thįk-į̈th-į̈-a muntu kaana.
        Ag-T-bury--C---C person child
      John is causing the person to bury the child.

     b. John ni-a-ku-thįk-į̈th-į̈-a kaana muntu.
        Ag-T-bury -C---C child person
      John is causing the child to bury the person.

It appears, then, that the NP immediately following the
verb is unambiguously understood as the LS. [9,10]

The "classical" approach to clause union outlined earlier
would predict, that in the case of two objects, the LS would
assume the position of indirect object. Using ability to

intuitive nature of the labels direct and indirect object, since
the primary object often has the reading of a beneficiary or
recipient, as though it were an IO, and the secondary object
often receives the consequences of the verb's action, as though
it were a DO. Kisseberth and Abasheikh (1976), working on the
Bantu language Chi-Mwi:ni, also comment on the difficulty of
defining objects, concluding that the features of direct object-
hood are shared by several NPs.

Comrie (1976) points out these problems in Swahili causa-
tives. He shows that it is the semantic beneficiary or reci-
pient which bears all the characteristics of DO - ability to
passivize in preferred sentences and government of verb agree-
ment. He shows also that the LS in Swahili causatives possesses
these properties of DO, even in cases where the lower sentence
contained an LDO in underlying structure. Thus, instead of
"hopping over" the LDO, the LS appears to usurp its place.
The LDO ceases to govern verb agreement. The predictions for
relational movements (that the LS takes the highest unfilled
slot) seem to be contradicted by the evidence from Swahili.

It will be shown here that the causative object situation
in KiMeru cannot be adequately explained by the original clause
union hierarchy. The LS in KiMeru does not take the position
of a term lower in rank than DO when it is faced with a filled
DO position. Neither does the clause union process operate as
in Swahili - the KiMeru LS does not become the primary DO, dis-
placing the LDO. Rather, it will be claimed that the two NPs
following the causative verb share the features of objecthood,
and are both best considered to be DOs. Furthermore, these
objects have relative strengths of objecthood, exhibiting a
hierarchy within the relation of DO.[3] Clause union is sensitive
to this object-internal hierarchy and will be shown to operate
in more-or-less its original form once the object hierarchy is
recognized.

KIMERU

As is common in Bantu languages, KiMeru possesses a noun-

class system. Each noun is prefixed by a class marker; and
verbs, adjectives, and demonstratives are prefixed with a marker
that agrees with the noun. The verb can carry suffixes or ex-
tensions that alter its meaning in various ways. Of interest
here is the causative suffix formed by the apparently discon-
tinuous constituent /ith...i/. A tense or aspect suffix can
appear between the two parts of the causative extension. Also
to be considered is the applied extension, formed by a suffix
/-ir-/, which normally follows the tense suffix and can appear,
along with the tense, between the various parts of the causative
constituent. The verb stem can have prefixed to it an object
prefix (OP). Only one OP can occur in KiMeru, and only in the
absence of the object to which it refers.[4,5]

The Causative

Normally, intransitive verbs cannot be followed by unmarked
objects, as in (1a) or (1c). But when suffixed by the causative,
an object may follow as in (1b) and (1d).[6]

1. a. *Muntu ni-a-in-ag-a kaana.
      Person Ag-dance-T   child
      *The person dances the child.

   b. Muntu ni-a-in-ith-ag-i-a kaana.
      Person Ag-dance-C-T-C   child
      The person makes the child dance.

   c. *Muntu ni-a-thogan-ag-a kaana.
      Person Ag-think-T   child
      *The person thinks child.

   d. Muntu ni-a-thogan-ith-ag-i-a kaana.
      Person Ag-think-C-T-C   child
      The person makes the child think.

If the causativized intransitives are analyzed as having
a bisentential source, then the object following the causative
verb is understood as the subject of a lower intransitive verb
(see Figure I).

passivize or to control the object prefix as tests, it can be shown that the LS and LDO both appear to have properties of direct objecthood. Consider the OP test first:

    6. a. Ni-a-ku-mi-rụg-ịth-ag-ị-a muka.
             Ag-T--OP-cook-C--T--C woman
             He was making the woman cook it (i.e., animal).

        b. Muntu ni-a-ku-mu-rug-ịth-ag-ị-a yo.
             Person Ag-T--OP-cook-C--T--C   it (i.e., animal).
             The person was making him/her cook it (i.e.animal).

    In (6a), the LDO (it-meat) is marked as an object prefix; but in (6b) the LS (him/her) is marked. Again, in (7), the same phenomenon occurs:

    7. a. Ni-a-ku-j-ỵng-ịth-ag-ị-a bo.
             Ag-T-OP-weed-C--T--C them
             He was causing them to weed it (i.e., millet).

        b. Ni-a-ku-bo-ỵng-ịth-ag-ị-a jụ.
             Ag-T-OP-them weed-C-T-C it
             He was causing them to weed it (i.e., millet).

    In (7a), the LDO (referring to the thing weeded) is marked. But, in (7b), the object prefix is understood as referring to the LS (the ones doing the weeding). It seems, then, that both NPs following the verb possess the property of controlling the object prefix.

    Both NPs can also be passivized:[11]

    8. a. Ni-ba-k-ỵng-ịth-ag-ỵ-a jụ ni Muntu.
             Ag-T-weed-C---T-Pass it by person
             They were caused to weed it (millet) by the person.

        b. Ni-jụ-k-ỵng-ịth-ag-ỵ-a muka ni muntu.
             Ag-T-weed-C---T-Pass woman by person
             It (millet) was caused to be weeded by the woman
               by the person.

    9. a. Ni-n-gur-ịth-ir-ỵ-e rio ni muntu.
             Ag-buy-C---T-Pass-it by person
             I was made to buy it (book) by the person.

        b. Yụkụ ni-ri-gur-ịth-ag-ỵ-a yo ni muntu.
             Book   Ag-buy-C---T-Pass it by person
             The book is caused to be bought by the woman by
               the person.

    10. a. Muka ni-a-ku-rụg-ịth-ag-ỵ-a yo ni muntu.
            Woman -Ag-T-cook-C---T-Pass it by person
            The woman was being caused to cook it by the person.

b. Yo ni-rug-ith-ag-u-a muka ni muntu.
It Ag-cook-C--T-Pass woman by person
It is caused to be cooked by the woman by the person.

In each of the (a) sentences in (8)-(10), the LS has pas-
sivized. In each of the (b) sentences, the LDO has been pro-,
moted by passive. Both NPs possess the ability to be directly
promoted by this rule.

That non-direct objects are not marked as OPs and do not
undergo passive is demonstrated in the sentences of (11) and
(12). The sentences of (11) show that objects of prepositions
cannot be referred to by OPs. The sentences of (12) indicate
that these objects cannot be promoted by passive.

11. a. *Muntu ni-a-mu-tum-ith-ag-i-a baruga kiri.[12]
Person Ag-OP-send-C---T--C letter to
The person causes the letter to be sent to him/her.

b. *Muntu ni-a-mu-tum-ith-ag-i-a baruga kiri muka.
Person Ag-OP-sent-C---T--C letter to woman
The person causes him/her to send the letter to
the woman.

c. *Muntu ni-a-mu-gur-ith-ag-i-a yuku re-a
Person Ag-op-buy--C---T--C book of/for
The person causes the book to be bought of/for
him/her.

d. Muntu ni-a-mu-gur-ith-ag-i-a yuku re-a muka.
Person Ag-OP-buy--C---T--C book of/for woman
The person causes him/her to buy the woman's book.

12. a. *Kaana ni-ka-ritan-ag-w-a kiswahili kiri
Child Ag-teach-T-Pass Swahili to
*The child is taught Swahili to.

b. *Kiri kaana ni-ka-ritan-ag-w-a kiswahili
to child Ag-teach--T-Pass Swahili
To the child is taught Swahili.

c. *Muka ni-a-tum-ag-w-a baruga re-a.
Woman Ag-send-T-Pass letter for/of
*The woman is sent the letter for.

d. *Re-a muka ni-a-tum-ag-w-a baruga.
For/of woman SP-send-T-Pass letter
For the woman is sent the letter.

e. *Muka ni-a-tum-ith-ag-u-a baruga kiri
Woman Ag-sent-C--T-Pass letter to
*The woman is caused to be sent the letter to.

f. *Kiri muka ni-a-tum-ith-ag-ụ-a baruga.
   To woman Ag-send-C--T-Pass letter
   To the woman the letter is caused to be sent.

It is not possible to draw a distinction between the objects
following the causative verb as clearcut and broad as that im-
plied by the IO/DO dichotomy, since both exhibit the same
qualities of direct objecthood. Thus, it is futile to explain
this clause union phenomenon as a process whereby the LS
assumes the relation of a term lower-ranked than DO on the
accessibility hierarchy.

Comrie's approach to Swahili is also of no assistance. The
LDO in KiMeru has a much stronger relationship to the verb than
that claimed for the LDO in Swahili, which no longer controlled
the object prefix and which could only passivize in less pre-
ferred sentences (1976). It cannot be claimed for KiMeru that
the LDO has been displaced in favor of the LS or demoted in any
way. Indeed, for KiMeru it must be concluded that the LS and
LDO share DO status.

The Applied Extension

Another source of DOs exists in KiMeru - from the applied
or benefactive extension. Sometimes called the prepositional
form of the verb, this extension allows a verb to have an extra
object in simple sentences:

13. a. *Muntu ni-a-in-ag-a kaana.
       Person Ag-dance-T child
       *The person dances the child.

    b. Muntu ni-a-in-ag-ir-a kaana.
       Person Ag-dance-T-A   child
       The person dances for the child.

14. a. *Muka ni-a-ku-rụg-ag-a muntu nyama.
       Woman Ag-T-cook--T   person meat
       *The woman was cooking person meat.

    b. Muntu ni-a-ku-rụg-ag-ir-a muka nyama.
       Person Ag-T-cook--T--A   woman meat
       The person was cooking meat for the woman.

The applied object (AO) takes the place next to the verb,
which as we have seen, was also taken by the LS. It is
possible to conclude that the relevant consideration for the

order of AO relative to DO is governed by humanness versus
inanimateness. Possibly the AO precedes the LDO because of
restrictions on positioning humans, animates, and inanimates
in relation to each other.[13] Since beneficiaries or recipients
will tend to be human, the AO tends to precede. But this
position must be abandoned. The sentences in (15) show that
there is no constraint against inanimates preceding animates or
humans in applied sentences.

15. a.   Ni-a-gur-ag-ir-a nyamba kuru.
          Ag-buy-T--A   house dog
         He buys a dog for the house.

    b.   Ni-a-gur-ag-ir-a kuru nyamba.
          Ag-buy-T--A   dog house
         He buys a house for the dog.

    c.   Ni-a-cu-ag-ir-a ngari ndrege.
          Ag-find-T-A   car   driver
         He finds a driver for the car.

    d.   Ni-a-cu-ag-ir-a ngari muntu.
          Ag-find-T-A   car   person
         He finds a person (i.e. driver) for the car.

    e.   Ni-a-tum-ag-ir-a nyamba muntu.
          Ag-send-T-A   house person
         He sends a person for the house.

    f. ?Ni-a-tum-ag-ir-a muntu nyamba.
          Ag-sends-T-A   person house
        ?He sends a house for the person.

    The presence of the AO in this position could be accounted
for by assuming it was simply generated as it appears. But the
similarity in appearance of the sentences in (13) and (14) to an
English dative moved sentence might suggest that the AOs origi-
nate as IOs in prepositional phrases. The AOs are moved to
DO position by a rule that promotes IOs to DOs.

    Such an approach has been argued against by Gary and Keenan
(forthcoming) for Kinyarwanda. They base their objections on
the lack of prepositional forms bearing a close semantic rela-

tionship to the applied extension. Kisseberth and Abasheikh (1976) have noted this lack of identity between prepositional meanings and the applied extension in Chi-Mwi:ni.

In the English sentences in (16) and (17), the dative moved sentences are very close, if not identical, in meaning to the prepositional forms from which they are supposedly derived. In fact, it is this identity of readings which lends credence to a dative movement transformation in English.

16. a. John bought a book for Mary.
    b. John bought Mary a book.
17. a. John sent a letter to him.
    b. John sent him a letter.

In KiMeru, the prepositional forms roughly corresponding to the applied extension can be expressed as in (18) and (19).

18. a. Ni-a-gur-ith-ag-i-a muntu yuku re-a sukulu.
       Ag-buy-C---T--C person book of school
       He makes the person buy a book for/from/of the school.

    b. Ni-a-gur-iir-e sukulu yuku.
       Ag-buy-T+A school book
       He bought for the school a book.

19. a. Ni-a-tum-ag-a yuku kiri muntu.
       Ag-send-T book to person
       He sends the book to the person/at the person's place.

    b. Ni-a-tum-ag-ir-a muntu yuku.
       Ag-send-T-A person book
       He sends to the person the book.

    c. Muntu ni-a-tum-ag-a baruga kwa muka.
       Person Ag-send-T letter at woman
       The person sends a letter from/at the woman's place.

While "kiri", "re-a" (or its variants depending on the class of the governing noun), and less clearly "kw-a", can be used to express the meanings of "to or "for"; these are not the only or even the primary readings for these forms. Their varied meanings are illustrated in the sentences of (20), (21), and (22):

20. Ni-a-theek-or-ith-ir-i-e muntu mburi jw-a murimi.
    Ag-tie R 'C -·T-C person goat of farmer
    He caused the person to untie the farmer's goat
    (or the goat of the farmer).

21. a. Muntu ni-a-thoom-ag-a kiri muka.
Person Ag-learn/read-T to/from/at woman
The person learns from the woman.

b. *Muntu ni-a-ritan-ag-a kiri muka.
Person Ag-teach-T to/at woman
(NOT: the person teaches to the woman --
this implies he is <u>inside</u> the woman.)

22. a. Muntu ni-a-ritan-ag-a kw-a muka.
Person Ag-teach-T at woman
The person teaches at the woman's place.

b. Muntu ni-a-rem-ag-a mwere kw-a muka.
Person Ag-grow-T millet at woman
The man grows millet on the woman's (land).

While "re-a" appears to be most correctly rendered by some
possessive like "of", and "kw-a" seems to represent a possessive
referring to a place, "kiri" is not easily translated at all.
In fact, the readings of "to" or "for" applied to these forms
seem to result only by inference; for example, in contexts where
"of" can imply a benefactive meaning. It is, then, not at all
certain that the applied extension is closely related to these
prepositions. In fact, there may even be some doubt that these
prepositions mark IOs at all, since they receive IO-type read-
ings only by "brute force". Perhaps their objects fit more
neatly into some oblique category.

Nevertheless, it is possible to maintain a rule similar to
dative movement if the AO is derived from an abstract preposi-
tional source. This rule would have to be obligatory, since
this abstract IO marker would never surface. Of interest here
is the expectation which may arise from such a rule that any
original DO in the sentence undergoing "dative movement" would
be demoted. That is, if the applied object is a promoted IO,
the original DO, by virtue of having been ousted, should not be
expected to possess object qualities. However, while there is
a preference to interpret an object prefix as referring to the
benefactive object, the original DO can be marked.

23. a. Ni-a-ci-rug-iir-e kuru.
Ag-OP-cook-T+A dog
He cooked them (i.e., animals) for the dog.

      b.   Ni-a-çi-rug-iir-e nyama.
          Ag-OP-cook-T+A   meat
          He cooked for them (animals) the meat.

24. a.   Muntu ni-a-ri-gur-ag-ir-a muka.
          Person Ag-OP-buy-T---A   woman
          The person buys it (book) for the woman.

      b.   Muntu ni-a-mu-gur-ag-ir-a yuku.
          Person Ag-OP-buy--T--A   book
          The person buys for him/her a book.

The (a) sentences in (23) and (24) indicate that the original DO can be prefixed in an applied sentence. The (b) sentences represent cases where the prefixed object is interpreted as the AO.

Passivization also applies to both objects.

25. a.   Nyama ni-i-rug-ag-ir-w-a muka.
          Meat   Ag-cook   T-A-Pass woman
          The meat is cooked for the woman.

      b.   Muka ni-a-rug-ag-ir-w-a nyama.
          Woman Ag-cook-T--A-Pass meat
          .For the woman is cooked the meat.

26. a.   Mburi ni-i-theek-or-ag-ir-wa muka.
          Goat   Ag-tie-----R--T--A-Pass woman
          The goat is untied for the woman.

      b.   Muka ni-a-theek-or-ag-ir-w-a mburi.
          Woman Ag-tie   R-T--A-Pass goat
          For the woman, the goat was untied.

The (a) sentences present cases of the original DO passivizing, while the (b) sentences represent passive promotion of the AO.

It is clear that both objects are accessible and possess characteristics of DOs. Regardless of whether the AO is actually derived by dative movement, it is not possible to maintain that the original DO has been demoted following the promotion of an IO. However the AO arrived in its position, the resulting sentences must be understood as containing two objects, both possessing the attributes of DO. To summarize, it has been shown up to this point that when a causee cooccurs with an underlying DO in a causative sentence, both NPs possess DO properties. In addition, when an AO cooccurs with an underlying DO, again both objects appear to be direct objects.

Causative plus Applied Sentences

The applied extension can be suffixed along with the causative. Since only two object slots are available following the causative verb, this concatenation of affixes produces a traffic jam. The LS, LDO and AO all three must compete for the two available positions. Since one NP must give way, it is in this construction where we begin to glimpse some stratification among the objects themselves. Of the object combinations that could occur (AO + LDO; AO + LS; LDO +AO; LDO +LS; LS + LDO; LS +AO), only AO + LDO actually occurs.

27. a. Ni-a-gur-įth-iir-į-e sukulu yųkų.
       Ag-buy--C---T + A-C school book
       He caused the book to be bought for the school.
       (NOT: He caused the school to buy the book for
             someone.)

    b. ?Ni-a-gur-įth-iir-į-e yųkų sukulu.
       Ag-buy---C--T+A-C--book school
       ?He caused the school to be bought for the book.

28. a. Muntu ni-a-gur-įth-ag-ir-į-a muka yųkų.
       Person Ag-buy--C---T--A--C woman book
       He causes the book to be bought for the woman.
       (NOT: He causes the woman to buy the book for
             someone.)

    b. ?Muntu ni-a-gur-įth-ag-ir-į-a yųkų muka.
       Person Ag-buy--C---T--A--C book woman
       ?The person causes the woman to be bought for the
        book.

29. a. Muntu ni-a-thįk-or-įth-ag-ir-į-a muka nyama.
       Person Ag-buy R--C---T--A--C woman meat
       The person causes the meat to be unburied for the
       woman.
       (NOT: The person causes the woman to unbury meat
             for someone.)

    b. ?Muntu ni-a-thik-or-įth-ag-ir-i-a nyama muka.
       Person Ag-burý--R--C---T--A--C meat woman
       ?The person causes the woman to be unburied for the
        meat.)

The first reading in English following the (a) sentences in (27) - (29) represents the only permissible interpretation. The reading, in parentheses and marked "NOT", illustrates the unacceptibility of an interpretation where one of the objects

is taken to be the LS. The (b) sentences show that reversing
the order of NPs to produce a sentence that is anomalous if the
objects are interpreted as AO + LDO, still does not allow any
alternative interpretation to surface. In these sentences, the
benefactive meaning pertains only to the NP nearest the verb.
There is , in addition, no way to achieve a reading that in-
volves the causee of the causative construction.

The LS cannot be made to appear in a causative + applied
sentence in the guise of an OP or oblique object, as indicated
in (30) and (31).

30.   *Muntu ni-a-mu-tum-ith-ag-ir-i-a muka baruga.
         Person Ag-OP-send-C---T--A--C   woman letter
         The person causes him to send the letter for the
            woman.

31. a. *Ni-a-tum-ith-ag-ir-i-a muka baruga ni muntu.
         Ag-send-C---T--A--C woman letter by person
         He causes the letter to be sent to the woman by
            the person.

    b.   Ni-a-theek-ith-iir-i-e muka mburi ya murimi.
         Ag-tie   C   T+A-C woman goat of/for farmer
         He caused the goat of the farmer to be tied for
            the woman.
         (NOT: He caused the goat to be tied for the woman
            by the farmer).

    c.   Ni-a-tum-ith-ag-ir-i-a kaana nguo kwa muka.
         Ag-sew--C---T--A--C   child clothes at woman
         He causes clothes to be sewn for the child at the
            woman's place.
         (NOT: He causes clothes to be sewn for the child
            by the woman).

    d.   Ni-a-tum-ith-ag-ir-i-a kaana nguo kiri muka.
         Ag-sew--C---T--A--C   child clothes to woman
         He causes the clothes to be sewn/fit to the child
            at the woman's place.
         (NOT: He causes the clothes to be fit to the
            child by the woman).

The sentence in (30) indicates that the usual preposition
to mark demoted subjects, such as passive agents, "ni", can-
not appear in this construction. The sentences in (31) show
that the other available prepositions are not interpretable as
marking an LS.

The inability of the LS to appear is again demonstrated by the sentences of (32), which contain two human participants. It would seem likely that a reading of causee could be given to one of the objects; but no such interpretation is possible.

32. a. Muntu ni-a-thik-or-ith-ag-ir-i-a muka kaana.
      Person Ag-bury-R--C---T--A--C woman child
      The person makes the child be unburied for the woman.
      (NOT: The person makes the woman unbury the child for someone.
      (NOT: The person makes the child unbury someone for the woman.

   b. Muntu ni-a-gur-ith-ag-ir-i-a muka kaana.
      Person Ag-bury-C--T--A--C woman child
      The person causes the child be bought for the woman.
      (NOT: The person causes the woman to buy the child for
      for someone.)
      (NOT: The person causes the child to buy something for the
      woman.)

   c. Ni-a-or-ith-iir-i-e muntu aritwa.
      Ag-spank-C-T+A-C person students
      He caused the students to be spanked for the person.
      (NOT: He caused the person to spank the students for someone.)
      (NOT: He caused the students to spank someone for the person.)

Even in cases where the semantics would seem to prefer something other than a strict AO-LDO interpretation as in (32b), no alternative reading including the LS can emerge. The LS gives way in the rush for object positions.

While it has been shown that the order of objects in causative + applied sentences must be AO-LDO, the accessibility of these objects remains to be investigated. The following examples demonstrate that both the AO and LDO can be marked as object prefixes and can undergo passivization, indicating their status as DOs.

33. a. Muntu ni-a-mi-rug-ith-ag-ir-i-a nyama.
      Person Ag-OP-cook-C--T--A--C meat
      The person causes meat to be cooked for it (animal).

    b. Muntu ni-a-ci-rug-ith-ag-ir-i-a muka.
       Person Ag-OP-cook-C--T--A woman
       The person causes them (i.e., animals) be cooked
       for the woman.

    c. Muntu ni-a-mu-rug-ith-ag-ir-i-a nyama.
       Person Ag-OP-cook-C--T--A meat
       The person causes the meat to be cooked for him.

34. a. Muka ni-a-gur-ith-ag-ir-u-a yuku.
       Woman Ag-buy---C--T--A-Pass book
       For woman, the book is caused to be bought.

    b. Yuku ni-ri-gur-ith-ag-ir-u-a kaana.
       Book Ag-buy----C---T--A-Pass child
       The book is made to be bought for the child.

    c. John a-ka-rug-ith-ir-u-a mucere.
       Ag-T--cook-C--A-Pass rice
       For John, the rice will be caused to be cooked.

    d. Mucere ju-ka-rug-ith-ir-u-a John.
       Rice   Ag-T-cook-C---A-Pass
       Rice will be caused to be cooked for John.

The sentences in (33) demonstrate that the OP can be under-
stood as the LDO or as the AO. The sentences in (34) show that
the AO and the LDO can be passivized.

It appears that in applied + causative Ss, the AO and LDO
both have properties of DOs. The LS, however, which can be a
DO in simple causatives, cannot appear at all in applied causa-
tives. These observations can be summarized in terms of the
relationship of clause union to the AH discussed earlier.
Imagine a lower sentence containing an AO and LDO at the time
of clause union. The LS has insufficient "strength" as an
object to usurp or wrest an object position from either conten-
der. Thus, finding all available object slots filled or fast
becoming filled, it must sink into oblivion. This leads to the
conclusion that the AO and LDO have some supremacy over the LS
in objecthood.

Relativization and Reflexivization

Further evidence for the object status of the AO, LS and
LDO comes from their ability to undergo reflexivization and
relativization.

Direct objects can be relativized, as demonstrated in the
simple sentence in (35):

35. Aritwa ba-re-a John a-jj-i ni-ba-rug-ir-e nyama.
    Students Ag-Rel   Ag-know-T Ag-cook-T   meat
    The students whom John knows cooked the meat.

Non-direct objects do not relativize, as illustrated in the
following sentences with prepositional forms:

36. a. *Aritwa ba-re-a John a-gur-ir-e nguo çi-a ni-ba-rug-
     Students-Rel   Ag-buy-T clothes of Ag-cook
     ir-e nyama.
     T   meat
    Students who John bought clothes for cooked meat.

   b. *Aritwa çi-a ba-re-a John a-gur-ir-e nguo ni-ba-rug
      Students-of Ag-Rel   Ag-buy-T clothes Ag-cook
      ir-e nyama.
      T----meat
     Students for whom John bought clothes cooked meat.

37. a. *Aritwa ba-re-a John a-tum-er-e baruga kiri ni-ba-rug-
     Students Ag-Rel   Ag-send-T letter to Ag-cook
     ir-e nyama.
     T   meat.
    Students whom John sent a letter to cooked meat.

   b. *Aritwa kiri ba-re-a John a-tum-er-e baruga ni-ba-rug-
      Students to Ag-Rel   Ag-send-T letter Ag-cook
      ir-e nyama.
      T--- meat
     Students to whom John sent a letter cooked meat.

In causatives, both the LS and LDO can be relativized:

38. a. Aritwa ba-re-a John a-rug-ith-ir-i-e nyama ba-gur-
     Students Ag-Rel   Ag-cook-C--T- C   meat Ag-buy
     er-e nguo.
     T   meat
    The students who John made cook meat bought clothes.

   b. Muntu a-rir-e nyama i-re-a John a-rug-ith-ir-i-e
     Person Ag-eat meat Ag-Rel   Ag-cook-C--T--C
     aritwa.
     students
    The person ate meat that John made the students cook.

In applied plus causative sentences, both the LDO and AO can be relativized.

39. a. Muntu ni-a-rir-e nyama i-re-a John a-rug-ith-iir-
     Person Ag-eat   meat Ag-Rel   Ag-cook-C-T+A
     i-e Mary.
     C
    The person ate the meat which John cooked for Mary.

   b. Aritwa ba-re-a John a-rug-ith-ag-ir-i-a nyama
     Students Ag-Rel   Ag-cook-C--T--A--C   meat
     ni-ba-gur-ir-e nguo..
     Ag-buy----T   clothes
    The students for whom John makes meat be cooked
    bought clothes.

The sentences in (40) demonstrate that DOs can normally be reflexivized, while those in (41) - (43) show that non-direct

objects do not undergo this process.

40. John ni-a-çị-or-ir-e
      Ag-Ref-spank-T
John spanked himself.

41. a. *Ni-a-çị-tum-er-e mbịça.
     Ag-Ref-send-T   picture
     (NOT: He sent a picture of himself).

  b. *Muntu ni-a-çị-tum-ịth-iir-ị-e muka mbịça ya.
     Person Ag-Ref-send-C A+T--C woman picture of
     (NOT: The person sent a picture of himself to
         the woman).

  c. Muntu ni-a-çị-tum-ịth-iir-ị-e baruga ya murimi.
     Person Ag-Ref-send-C A+T-C letter of farmer
     The person caused the farmer's letter to be sent
        to himself (himself="muntu").

42. a. *Ni-a-çị-tum-ịth-ir-ị-e baruga kiri.
     Ag-Ref-send-C--T--C letter to
     (NOT: He caused someone to send a letter to himself).

  b. *Ni-a-çị-tum-ịth-ir-ị-e baruga kiri muntu.
     Ag-Ref-send-C--T--C letter to person

43. a. Muntu ni-a-tum-er-e mbịça ya gwe.
     Person Ag-send-T   picture of he
     The person sent a picture of him(self).

  b. Muntu ni-a-çị-tum-ịth-iir-ị-e baruga.
     Person Ag-Ref-send-C T+A-C letter
     The man sent himself a letter.

The sentences in (41a, b), which are ungrammatical, demon-
strate that the reflexive marker cannot be interpreted as
referring to an object of a preposition. The glosses marked
"NOT" indicate the reading being sought, which is impossible
in KiMeru. (41c) indicates that the reflexive refers back to
the subject rather than to the prepositional object, when this
object appears in the sentence. The sentences in (42) show
that a change of preposition still does not allow the object
of the preposition to be reflexivized. (42b) is not interpretable
at all. The only possible rendition of "picture of himself" is
given in (43a). This sentence is not actually reflexive, since
the reflexive morpheme "çị" does not appear. The literal
translation is "the person sent a picture of him", which can
mean either "he sent the picture of himself" or "he sent the

picture of him (someone else)." The sentence in (43b) is the only possible rendition of "send to himself". It involves an applied extension rather than a prepositional form.

The following examples show that the AO, LDO and LS all behave like objects in their ability to undergo reflexivization.

44. a. Ni-a-çi-thik-ith-ag-ir-i-a kaana.
         Ag-Ref-bury-C---T--A--C child
         He causes the child, to be buried for himself.

     b. Ni-a-çi-thik-ith-ag-i-a.
         Ag-Ref-bury-C---T--C
         He causes someone to bury himself.

     c. Ni-tw-i-thoom-ith-ir-i-e.
         Ag-Ref-study-C---T--C
         We made ourselves study.

These examples indicate that it is not the case that the AO, LDO or LS fail to undergo rules which operate on DOs in KiMeru.

Relative Strength of Objects

Recall that though the AO, LDO, and LS all behave like DOs, the LS is unable to compete with the AO and LDO for a position in applied-causative sentences. Thus the LS appears to have less strength of objecthood than the AO or LDO. The relative strength of the possible objects can be further demonstrated by investigating the interpretations given to single objects in constructions that potentially can have two objects.

Taking the simple applied construction first, it is clear from the sentences in (45) that an object prefix is unambiguously understood as the beneficiary or recipient (AO), and not as an NP undergoing the verb's action (underlying DO). Apparently, the AO reading takes precedence over the DO reading.

45. a. Ni-a-mi-rug-iir-e.
         Ag-OP-cook T+A
         He cooked for it (animal).
         (NOT: He cooked it for someone.)

     b. Ni-a-mu-rug-ag-ir-a.
         Ag-OP-cook--T--A
         He cooks for him/her.
         (NOT: He cooked him/her for someone.)

    c. Ni-a-çi-rug-ag-ir-a.
        Ag-OP-cook--T--A
        He cooks for them (animals).
        (NOT: He cooks them for someone.)

    d. Muntu ni-a-mu-tum-ag-ir-a.
        Person Ag-OP-send-T--A
        The man sends to him/her.
        (NOT: The man sends him/her to someone.)

In the passive, if only one object occurs, the passivized
NP is interpreted as the AO:

46. Kaana ni-ka-thik-or-ag-ir-w-a.
     Child Ag-bury---R--T--A Pass
     For the child, someone is buried.
     (NOT: The child is buried for someone.)

If sentences with two human NPs are investigated, it is
discovered that the passivized or marked object is always inter-
preted as the AO rather than the underlying DO.

47. a. Muntu ni-a-mu-theek-or-ith-ag-ir-i-a muka.
       Person Ag-OP-tie----R--C---T--A--C   woman
       The person causes the woman to be untied for him.

       (NOT: The person causes him to be untied for the
            woman.)

   b. Ni-a-mu-thik-ir-e muntu.
        Ag-OP-bury-A   person
       He tied the person for him.
       (NOT: He tied him for the person.)

   c. Muntu ni-a-mu-tum-ag-ir-a muka.
       Person Ag-OP-send-T-A   woman
       The person sends the woman to him.
       (NOT: The person sends him to the woman.)

48. a. Muka ni-a-theek-or-ith-ag-ir-u-a muntu.
       Woman Ag-tie----R--C---T--R--Pass person
       For the woman, the person is caused to be untied.
       (NOT: The woman is caused to be untied for the
           person.)

   b. Muka ni-a-thik-ith-ag-ir-u-a kaana kare keega.
       Woman Ag-bury--C---T--A-Pass child dem. good
       The good child is caused be buried for the woman.
       (NOT: The woman is caused be buried for good child.)

The applied interpretation is the only one given to the
object in cases where only one object appears. In addition,
if both objects are human, and equally plausible as recipients

or beneficiaries, the applied reading is always given to the promoted or marked NP.

Relative Strength of Objects: LS and LDO

Causative sentences which normally permit two objects (LS and LDO) to follow the causative verb, can also be produced with only one object. The sentences that follow show that the object which remains must be interpreted as an LDO rather than an LS.

49. a. Muntu ni-a-tum-ith-ag-i-a kaana.
    Person Ag-send-C---T--C   child
    The person causes the child to be sent.
    (NOT:The person causes the child to send.)

b. ?Muntu ni-a-tum-ith-ag-i-a kaana.
   Person Ag-sew-C---T--C   child
   ?The person causes the child to be sewn/made.
   (NOT: The person causes the child to sew/make.)

c. Muntu ni-a-ku-thik-ith-i-a kaana.
   Person Ag-T--bury-C---C   child
   The person is causing the child to be buried.
   (NOT: The person is causing the child to bury.)

d. Muntu ni-a-ku-thik-or-ith-i-a kaana.
   Person Ag-T-bury--R--C---C   child
   The person is causing the child to be unburied.
   (NOT: The person is causing the child to unbury.)

e. Muntu ni-a-ku-thik-ith-i-a ngatuni.
   Person Ag-T-bury--C---C   lion
   The person is causing the lion to be buried.
   (NOT: The person is causing the lion to bury.)

f. Muka ni-a-rind-ith-ir-i-e kaana.[14]
   Woman ag-bury--C---T--C   child
   The woman caused the child to be buried.
   (NOT: The woman caused the child to bury.)

g. Muka ni-a-rum-ith-ir-i-e kaana
   Woman Ag-bite-C---T--C   child
   The woman caused the child to be bitten.
   (NOT: The woman caused the child to bite.)

h. Muka ni-a-rum-ith-ir-i-e karu.
   Woman Ag-bite-C--T--C   dog
   The woman caused the dog to be bitten.
   (NOT: The woman caused the dog to bite.)

i. Muntu ni-a-reet-ith-ir-i-e muka.
   Person Ag-bring-C---T--C   woman
   The person caused the woman to be brought.
   (NOT: The person caused the woman to bring.)

j. Muka ni-a-anang-ith-ir-j-e muntu.
Woman Ag-scarify-C--T--C person
The woman caused the man to be scarified.
(NOT: The woman caused the man to scarify.

k. ?Muntu ni-a-eeg-ith-ir-j-e kaana.
Person Ag-drill-C--T--C child
?The person caused the child to be drilled.
(NOT: The person caused the child to drill.

The examples in (49) confirm that the LDO is preferred over the LS. If only one object can appear, it is the LDO which must be retained. However, the sentences in (50) allow only the reading of LS for the single object.

50. a. Muntu ni-a-jn-jth-ag-j-a kaana.
Person Ag-dance-C-T-C child
The person makes the child dance.

b. Muntu ni-et-jth-ir-j-e kaana.
Person Ag-go-C--T--C child
The person made the child go.

c. Muntu ni-a-gwj-jth-ag-j-a yuku.
Person Ag-fall-C---T--C book
The person makes the book fall.

d. Muntu ni-a-thogan-ith-ag-j-a ngatuni.
Person Ag-think---C---T--C lion
The person causes the lion to think.

e. ?Muntu ni-a-thogan-ith-ag-j-a bjakuria.
Person Ag-think---C---T--C food
?The man causes the food to think.

f. Muntu ni-a-n-dikan-jth-ir-j-e.
Person Ag-OP-recall-C--T--C
The person made me recall (remember).

These sentences happen to contain intransitive verbs, which normally do not allow objects, as illustrated in (51).

51. a. *Muntu ni-a-gw-ir-e yuku.
Person Ag-fall-T book
*The person fell the book.

b. *Muntu ni-a-thogan-ag-a ngatuni.
Person Ag-think---T lion
*The person thinks lion.

c. *Muntu ni-a-thogan-ag-a muka.
Person Ag-think--T woman
*The person thinks woman.

d. *Muntu ni-a-jn-ag-a kaana.
Person Ag-dance-T child
*The person dances the child.

e. *Kaana ne g-et-ir-e muntu.
   Child Ag-go-T person
   *The child went person.

The LS, then, appears in single-object causatives when there is no possibility of an LDO appearing - when the lower sentence contains an intransitive verb. When competition over object position arises, the LS gives way before the LDO. Though both LS and LDO behave as DOs in causatives, the LS seems to be weaker than the LDO.

Unfortunately, the neatness of this argument is undermined by the presence of some verbs which allow a single object to be interpreted as either LS or LDO in causatives:

52. a. Muntu ni-a-ku-rug-ith-ag-i-a muka.
       Person Ag-T-cook-C---T--C woman
       The person causes the woman to cook.
       The person causes the woman to be cooked.

    b. Muntu ni-a-ku-rug-ith-ag-i-a yo.
       Person Ag-T cook-C---T--C it
       The person was making someone cook it (animal).
       The person was making it (animal) cook.

    c. Muntu ni-a-mw--ig-ith-ag-i-a.
       Person Ag-OP-hear-C--T--C
       The person causes him to be heard.
       The person causes him to hear.

In some cases, a single object will violate the semantic requirements of an LDO or LS for a particular verb, forcing the object to be interpreted as only one of the two possibilities. But when an appropriate object is substituted, the blocked reading appears, as in (53).

53. a. Muntu ni-a-k-ung-ith-ag-i-a aritwa.
       Person Ag-T-weed-C--T--C students
       The person causes the students to weed.

    b. Muntu ni-a-k-ung-ith-ag-i-a mwere.
       Person Ag-T-weed-C--T--C millet
       The person causes the millet to be weeded.

Sentence (53a) contains an object understood as an LS. (53b) has an object which is understood as an LDO.

A well-motivated explanation for this phenomenon is not at hand. Apparently it is not always the case that the LDO is so much stronger than the LS that the LS cannot appear. The strength

of the LDO seems to be conditional on some factor. It comes to mind that the relevant facts might be the transitivity of the verb in question. The native speaker's reactions to the parenthesized readings in (49) - those where the object is taken to be an LS - is that the sentence is incomplete, in need of an LDO object. In contrast, the reaction to the sentences in (52) was that no LDO object was necessary. These intuitions group the sentences into those with verbs that require an underlying DO - are strongly transitive, those with verbs that allow but do not require an underlying DO - are moderately transitive, and those sentences with intransitive verbs which prohibit underlying DOs. Indeed, a transitivity hierarchy is suggested. The problem posed by the sentences of (52), however, relates not to whether the DOs in Kileru are ranked relative to strength, but why they should be ranked as they are. Why should the LDO be stronger than the LS? Perhaps because it is "prescribed" by the verb via transitivity. Why should the AO be stronger than the LDO? Perhaps because it is promoted into object position (either by movement or by virtue of being marked on the verb). These are interesting questions for further investigation but are beyond the scope of this paper.

Intransitive Verbs

In causative plus applied sentences examined previously, the LS did not appear. According to the clause union approach, the LS did not appear because all available object positions were filled. According to the hierarchy of object strength proposed here, the LS did not surface because it was weaker than both the LDO and AO. But it could be argued that the LS only appears in the position nearest the verb, the position in which the AO appears. The competiton is not, then, between LS, LDO, and AO, but only between LS and AO. Again, it could be argued that the LS and AO are simply mutually exclusive.

Intransitive verbs in causative plus applied sentences provide a test for these conjectures. If clause union operates as expected, the absence of an LDO - leaving an unfilled object

position - should allow the LS to surface. Similarly, if the LS competes with the LDO as well as the AO, the absence of an LDO should allow the presence of the LS in the second object position. In fact, these predictions are borne out, as indicated by the sentences in (54).

54. a. Muntu ni-a-in-ith-ag-ir-i-a muka kaana.
       Person Ag-dance-C-T-A   woman child
       The person makes the child dance for the woman.

    b. Muntu ni-a-gwi-ith-ag-ir-i-a muntu miti.
       Person Ag-fall-C--T--A--C person tree
       The person makes the tree fall on the person.

    c. Muntu ni-a-thogan-ith-ag-ir-i-a muritani aritwa.
       Person Ag-think -C---T--A--C   teacher students
       The person makes the students think for the teacher.

Thus it appears that the object hierarchy and clause union in KiMeru causatives work as expected. The LS can become a DO as long as one of the DO positions is empty.

Two-Object Verbs

KiMeru has a group of verbs which prohibit the surfacing of an LS interpretation even in the simple causative. Examples of these occur in (55).

55. a. Muntu ni-a-ku-ritan-ith-i-a muritani Kiswahili.
       Person Ag-T-teach--C---C   teacher Swahili
       The person is causing Swahili to be taught to the
         teacher.
       (NOT: The person is causing the teacher to teach
         Swahili.)

    b. Ni-mp-ej-ag-ith-i-a muka kaana.
       Ag-give-T---C--C woman child
       The child is caused to be given to the woman.
       (NOT: The woman is caused to give the child.)

In these sentences the object appearing next to the verb is interpreted as though it were an AO, but no applied extension occurs. However, these verbs are also peculiar in non-causative sentences where two objects occur without benefit of an applied extension:

56. a. Muritani ni-a-ku-ritan-ag-a kaana Kiswahili.
       Teacher   Ag-T-teach--T   child Swahili
       The teacher was teaching Swahili to the child.

b. Muntu ni-a-kw-ej-ag-a muka kaana.
   Person Ag-T-give-T woman child
   The person was giving the child to the woman.

It might be tempting to suggest that an IO has finally been discovered, but the following sentences indicate that both objects have the characteristics of DOs.

57. a. Muka ni-a-e-r-w-e yuku ni muntu.
      Woman Ag-give-T-Pass-book by person
      The woman was given the book by the person.

   b. Yuku ni-r-e-r-w-e muka ni muntu.
      Book Ag-give-T-Pass-woman by person
      The book was given to the woman by the person.

58. a. Kiswahili ni-ki-ritan-ir-w-e kaana.
      Swahili   Ag-teach T-Pass child
      Swahili was taught to the child.

   b. Kaana ni-a-ku-ritan-ir-w-e Kiswahili.
      Child Ag-T-teach--T-Pass Swahili
      To the child was taught Swahili.

59. a. Muritani ni-a-mu-ritan-ag-a Kiswahili.
      Teacher   Ag-OP-teach-T-- Swahili
      The teacher teaches Swahili to him.

   b. Muritani ni-a-ki-ritan-ag-a kaana.
      Teacher   Ag-OP-teach-T   child
      The teacher teaches it (Swahili) to the child.

Either object can be promoted to subject position by passivization, as in (57) and (58), and either object can be marked by a prefix on the verb, as in (59).

In addition, if only one object appears in a sentence with such a verb, it can be understood as either object:

60. a. Muritani-ni-a-ritan-ag-a muntu.
      Teacher   Ag-teach-T   person
      The teacher teaches (to) the person.

   b. Muritani ni-a-ritan-ag-a Kiswahili.
      Teacher   Ag-teach-T-- Swahili
      The teacher teaches Swahili.

With these verbs, the single object receives an interpretation of a recipient (60a) or of an object undergoing the action of the verb (60b) depending on the characteristics of the NP appearing. But "normal" verbs, which never allow two objects in non-applied constructions cannot allow the single object to have a

recipient interpretation.

    61. a. *Ni-a-gur-ag-a muka yuku.
          Ag-buy-T   woman book
       *He buys woman book.

       b. Ni-a-gur-ag-a kaana.
           Ag-buy-T   child
         He buys the child.
         (NOT: He buys for the child.)

    62. a. *Muntu ni-a-tum-ag-a muka baruga.
         Person Ag-send-T woman letter
       *The person sends woman letter.

       b. Muntu ni-a-mu-tum-ag-a.
         Person Ag-OP-send-T
         The person sends her/him.
         (NOT: The person sends to her/him.)

    63. a. *Muntu ni-a-k-ung-ag-a aritwa mwere.
         Person Ag-T-weed-T students millet
       *The person weeded the students millet.

       b. ?Muntu ni-a-k-ung-ag-a aritwa.
         Person Ag-T-weed-T students
       ?The person weeded the students.

       (NOT: The person weeded for the students.)

Sentence (63b), which would be acceptable if a recipient
interpretation were allowed for the object, is forced into
anomaly by the requirement that the object be interpreted only
as undergoing the action of the verb. The verbs of (60) can
be considered as somehow inherently two-object verbs since they
allow two objects without benefit of an applied extension.

    The failure of the LS to appear in the causative sentences
of (55) can be explained within the clause union framework if
these are considered to be inherently two-object verbs. Since
two-object verbs fill both available object positions in KiMeru,
there is no place for the LS to go; and since the LS is lowest
on the scale of object strengths, it cannot compete for a posi-
tion and oust one of the incumbent objects. Thus the LS does
not appear.

CONCLUSION

    It has been argued that the unmarked NPs following the verb
in KiMeru causatives cannot be assigned different levels of

termhood. Both NPs, whether an LS, LDO, or AO, undergo the
rules used to test direct object status; and both NPS can be
marked by an object prefix on the verb. Even so, there are
more subtle distinctions between the objects that indicate that
some are stronger than others. Thus the AO interpretation is
preferred for a marked or promoted object if such a reading is
logically possible. In addition, when there is only one object
to which to assign the reading AO or LDO, the AO interpretation
emerges. When this choice must be made between an LDO and an
LS, the LDO usually surfaces. Finally, when there is competi-
tion for object positions such as arises in causative plus ap-
plied sentences, where there are three NPS trying to get into
two slots, the AO and LDO, but not the LS, can appear. Taken
together, this evidence suggests that the objects must be ranked
in accordance with their greater tenacity or strength of object-
hood as: AO - LDO - LS.

It appears probable, then, that the relation of DO, and per-
haps the other relations as well, does not represent a discrete
position. With this consideration, clause union in KiMeru works
as expected following the description of Comrie (1976) mentioned
earlier. When displaced from subject position by clause union,
the LS goes in search of an unfilled position. Since two ob-
jects of DO status are allowed, a simple causative presents no
difficulties: the LS simply takes up DO status next to the LDO.
When two object positions are filled by other objects, the LS
cannot appear at all. In two-object verbs, both object positions
are filled; and, as would be expected, the LS cannot appear.

In conclusion, the relation of object must be allowed to
have an internal hierarchy, at least for KiMeru. Whether such
a hierarchy is a general phenomenon or only specific to KiMeru
is not certain, but it will be interesting to see whether all
the relations might have to be reanalyzed in such a way.

FOOTNOTES

3. By strength is meant "is preferred" or "has greater tenacity of position". A DO of greater strength is one which wins out over other DOs in competition for object position or is preferred over other DOs for promotion. This "strength" is used to show the relationship of the various potential DOs to each other. This notion is necessary since the objects in question all bear the same grammatical relation to the verb - that of DO. Thus it is not possible to refer to different levels of termhood to explain the behavior of the DOs in KiMeru - they must be ranked within the relation direct object.

4. The abbreviations used in glosses are as follows:

Ag=agreement prefix	A=applied
OP=object prefix	R=reversive
T=tense/aspect	Rel=Rel. clause pronoun
C=causative	Ref=reflexive

The past tense morpheme /-ir-/ and the applied /-ir-/ combine to produce /-iir-/. The English translation includes definite or indefinite articles for readability. These are not meant to imply any corresponding indefiniteness in the KiMeru sentence. Each sentence in KiMeru begins with an untranslatable and unglossed /-ni-/, and each sentence ends with an unglossed "theme vowel" - "a" or "e". /i/ and /u/ are high vowels; /i/ and /u/ are mid.

5. The consultant initially accepted a few sentences with two OPs, under some pressure, but then later rejected them. His hesitancy in regard to these sentences leads to the conclusion that, if they exist at all, they are at the extreme limits of acceptability.

6. The intransitive verbs considered throughout actually include verbs which are very nearly intransitive, but able to take certain objects. Thus verbs like "dance" can appear with cognate objects: "he danced a dance". This relaxation of the notion "intransitive" does not affect the arguments put forth, since the objects allowed following the causative forms, as in examples (1b) and (1d), are precisely those kinds of obects disallowed in simple sentences like (1a) and (1c).

7. The verb "kutuma" actually means "to make", but receives the translation "sew" in this context.

8. "Kugura" also means "to marry".

9. Bokamba (1976) suggests mirror-image ordering for objects following derivational extensions in Bantu languages. Briefly, he argues that the objects follow the verb in the reverse order of their governing extensions. He does not claim generality for this principle, but it could be operative in KiMeru. This would explain why the LS immediately follows the causative - the causative extension is verb-final. The applied extension, too, as later discussion will show, causes the applied object to immediately follow the verb. In these cases, the applied extension is word final. When the applied and causative extensions are combined in a single verb, the main causative morpheme -ith- precedes the applied extension, which is verb-final. As might be expected, the ordering of the objects places the applied object (AO) nearest the verb while the causee, in mirror image fashion, follows in the second object position (when it surfaces at all - with intransitive verbs). Again, it can be gleaned from the Shona examples of Hawkinson and Hyman (1974) that the applied extension precedes the causative when these are combined. Interestingly enough, the normal object order is causative-applied, the opposite of that in KiMeru, but mirroring the order of the extensions.

    However, the facts of mirror-image ordering are not sufficient to explain the object interactions. Thus, though the final causative suffix may account for the LS-LDO ordering of KiMeru objects, it cannot be credited with imbuing its object with superior strength. As will be argued, the LS is weaker in tenacity of objecthood than the LDO, even though it precedes the LDO. The point is that the object nearest the verb is not necessarily "primary" nor the one further away "secondary". Nevertheless, it may turn out that the relative strength of objects may be in some way connected to the relative ordering of the extensions. Thus in Shona (Hawkinson and Hyman, 1974) the causative follows the applied extension in the verb stem (is nearer the end of the verb) and the LS is apparently more accessible or s stronger than the AO. This is the reverse of the KiMeru situation. Whether the correlation between extension ordering and object strength is spurious or not must await further study.

10. Though the usual object order following the causative verb is LS-LDO, there are cases where the opposite -LDO-LS - may occur. The sentence in (a) below is therefore ambiguous.
    (a) Muntu ne-a-rej-ith-ir-i-e kaana ngatuni.
        Person Ag-eat-C---T--C child lion

      The person caused the child to eat the lion.

      The person caused the child to be eaten by the lion.

This is apparently the result of a preference for placing more human or animate objects before (to the left of) less animate objects. The ordering of the objects in (a) can reflect either the LS-LDO order or the humanness-animacy order, resulting in ambiguity. Hawkinson and Hyman (1974) discuss similar interactions of animacy and syntactic rules.

    That the humanness-animacy principle is not absolute is demonstrated by (b). Here the causee, a vegetable, is allowed to precede the human object.

    (b) Muntu ni-a-rej-ith-ir-i-e yua muka.

        Person Ag-eat--C--T--C flower woman

        The person caused the flower (carnivorous plant)

        to eat the woman.

    Perhaps the sentence in (a) is linked to the operation of humanness in passives. There is a preference in passives for the more human object to precede. Thus "kaana" may be passivized in (c) when it is the only object; but it may not be passivized over "muka" in (d). Here, "kaana" is not from the human class (it is prefixed by the diminutive class marker (ka), while muka is from the human class.

    (c) Kaana ne-ka-rind-ith-ir-u-e.

        child   Ag-bury-C---T-Pass

        The child was caused to be buried.

    (d) ?Kaana ne-ka-rind-ith-ir-u-e muka.

        child   Ag-bury-C---T-Pass woman

        The child was caused to bury/be buried by the

        woman.

But if dog, "kuru", is substituted for woman, "muka", then "kaana" may be promoted. Sentence (e) is acceptable. In (f), however, "dog" has been advanced in front of "child", causing unacceptability.

    (e) Kaana ne-ka-rind-ith-ir-u-e kuru.

        child   Ag-bury-C---T--Pass dog

        The child was caused to bury the dog.

    (f)?Kuru ne-i-rind-ith-ir-u-e kaana.

        Dog   Ag-bury-C---T--C   child

        The dog was caused to bury/be buried by the child.

   Since the humanness-animacy constraints of passives and causatives are similar, it is possible to speculate that the alternative LDO-LS reading in (a) reflects an application of passive in the lower sentence. This predicts that all human-animate object orders in causatives that could possibly derive from passives should be ambiguous. In particular, not only should human-non-human groupings as in (a) have two readings, but sentences with objects of equal animacy should also be ambiguous. This is borne out by (g):

    (g) Muntu ni-a-rej-ith-ir-i-e kuru ngatuni.

        Person Ag-eat-C---T--C dog lion

        The person caused the dog to eat the lion.

        The person caused the dog to be eaten by the lion.

Unfortunately, this conclusion is far from certain, since sentences like (h) have only one reading.

    (h) Muntu ni-a-rej-ith-ir-i-e mwere jua
            Person Ag-eat-C---T--C   millet flower
            The person caused the millet to eat (i.e., choke)
              the flower.
            (NOT: the person caused the millet to be eaten
              by the flower (i.e., fed to a venus fly-trap).

11.   There is some preference for more human or animate NPs to be leftmost in passives, though this does not seem to be absolute. (See footnote 10 for a discussion of this).

12.   "Gutuma" also is used to mean "to cause".

13.   See Hyman and Hawkinson (1974) for a discussion of humanness-animacy.

14.   "ku-rinda" is closer to "bury" in the English sentence than is "ku-thĩka". The latter differs mysteriously from the former and seems to mean "to cover with dirt".

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CHIMWI:NI PREFIX MORPHOPHONEMICS

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1. Introduction.

This paper will examine in some detail a number of phonological
alternations in Chimwi:ni (a Bantu language closely related to Swahili
spoken in the city of Brava in southern Somalia).[1] These alternations
mostly involve the vowels in the noun class and concordial (agreement)
prefixes that are the hallmark of Bantu languages, though we include
mention of certain consonantal modifications directly linked to the
vocalic alternations exhibited by the prefixes. While the aim of this
paper is primarily to provide a description of certain aspects of the
morphophonemic structure of a little known Bantu language, the data
described are not without several theoretically interesting features.
In particular, the alternations investigated here are pertinent to
such topics as (1) the role of grammatical structure in phonology,
(2) the "multiple application problem" in phonology,[2] (3) the question
of when two or more phonological phenomena should be regarded as instances
of a single process, (4) the construction of a theory of exceptions, etc.
Because of the descriptive nature of this paper, and the relatively
small amount of Chimwi:ni data currently available, we have provided
copious illustrations of the processes examined.

2. An Inventory of Prefixes.

In order to facilitate discussion below, we give here an exhaustive
list of Chimwi:ni prefixes in what we take to be their underlying form.
In all cases the underlying representation chosen actually occurs as a
surface allomorph of the prefix in question, and the particular allomorph
chosen as basic does not appear to us to be particularly controversial.
Examples are provided to illustrate the use (or uses) of each prefix.

Chimwi:ni nominals belong to one of thirteen major noun classes;
each nominal bears the characteristic prefix of the noun class to which

it belongs. The Chimwi:ni noun classes (NC) and their characteristic
prefixes (NCP) are listed in (1).

(1)   NC   NCP   example   gloss

        1   mu-   mu-ke   woman

        2   wa-   wa-ke   women

        3   mu-   mu-ti   tree

        4   mi-   mi-ti   trees

        5   i-'   i-jiwe   stone

        6   ma-   ma-jiwe   stones

        7   chi-[3]   chi-su   knife

        8   zi-   zi-su   knives

        9   N-[4]   m-p^{h}aka   cat

        10   N-[4]   m-p^{h}aka   cats

        11   li-   l-kuta[5]   wall

        12   u-   u-hurų   freedom

        13   ku-   ku-ja   to eat

It can be readily observed that some noun classes (NC1 and NC3,
NC9 and NC10) have identical NCP (mu- and N- respectively). Nominals
such as muke 'woman'/muti 'tree' and mp^{h}aka 'cat'/mp^{h}aka 'cats' are
regarded as belonging to different classes (despite sharing phonologically
identical NCPs) on the basis of the fact that they govern different
concord (agreement) on grammatically dependent items. For example, a
finite verb is obligatorily marked with a subject prefix (SP) that
agrees with the noun class of the nominal functioning as subject of
that verb. In (2) we list the SPs required by nominals belonging to
classes 1 through 12. (In Chimwi:ni verbs do not take a SP in agreement
with NC13 -- the infinitives; instead the "impersonal" SP i- is used.)

(2)   NC   SP   example   gloss
      1   Ø   muke Ø-tokoseze ma:yi   'the woman boiled water'
      2   wa-   wake wa-papent^{h}e ma:nda 'the women shaped the dough
                                              into bread'
      3   u-   muti u-burbushile   'the tree fell down'

4	ya-	miti ya-burbushiłe	'the trees fell'
5	i-	ijiwe i-zami:łe	'the stone sank'
6	ya-	majiwe ÿa-zami:łe	'the stones sank'
7	chi-	chisu chi-m-poṭe:łe	'he dropped the knife - lit. knife dropped him'
8	zi-	zisu zi-m-poṭe:łe	'he dropped the knives'
9a	∅⁶	mpʰaka ∅-ji:łe	'the cat ate'
9b	i-	nu:mba i-vundishiłe	'the house fell down'
10	zi-	mpʰaka zi-ji:łe .	'the cats ate'
		nu:mba zi-vundishiłe	'the houses fell down'
11	li-	lkuta li-m-burbuḳili:le	'the wall fell on him'
12	u-	uhuru u-m-furahishi:ze	'freedom pleased him'

Although in many instances the SP required by a particular noun class is phonologically identical to the NCP characteristic of that class, this is not always the case. For instance, NC1 has mu- as its NCP, buttakes ∅ as its SP; NC3 also has mu- as its NCP, but takes u- as its SP (the same as NC 12).

As in many Bantu languages, nouns belonging to NC1 and NC2 refer exclusively to human beings. The SP ∅ is thus understood as referring to a 3 sg. human subject and the SP wa- is understood as referring to a 3 pl. human even if no overt subject nominal appears. First and second person (human) subjects are indicated by the SPs listed below in (3).

(3) 1 sg. subject   ni-   e.g. ni-je 'that I eat'
     2 sg. subject   ∅-   e.g. ∅-ji:łeni 'what did you eat?'
     1 pl. subject   chi- e.g. chi-na:kujá 'we are eating'
     2 pl. subject   ni-   e.g. ni-je   'that you pl. eat'

A Chimwi:ni verb may also contain an object prefix (OP) agreeing with the noun class of the object of the verb. In most instances, the OP is identical to the corresponding SP. The only differences are in the OPs for a 2 sg. and 3 sg. human object, which are xu- and mu- respectively (the corresponding SPs are both ∅).

The prefixes cited above constitute all of the phonologically distinct prefixes connected with the Chimwi:ni noun class system. The only other prefixes in the language are those associated with the verb system. These prefixes, listed in (4), indicate such things as tense, aspect, negation, etc.

(4)

present tense	na-	e.g.	na-x-so:m-á 'he is reading'
future tense	ta-	e.g.	ta-ku-lim-a 'he will cultivate'
habitual (affirmative)	hu-	e.g.	hu-j-ó 'one who eats'
habitual (negative)	ha-	e.g.	ha-so:m-i 'he does not read'
negative	nt^{h}a-	e.g.	nt^{h}a-na-ku-la:l-a 'he is not sleeping'
negative	si-	e.g.	si-lum-é 'don't bite!'
infinitive[7]	ku-	e.g.	ku-n-a 'to drink'
			na-ku-la:l-a 'he is sleeping'
hypothetical	ka-	e.g.	ka-fakat-á 'if he were to run'
conditional	chi-	e.g.	chi-f-a 'if he dies'
past continuative	chi-	e.g.	chi-j-a 'he was eating'

3. Vowel Drop-I. A number of prefixes in Chimwi:ni exhibit an alternation between V and Ø (null) in certain, but not all, pre-consonantal positions. The infinitive prefix ku- can be used to illustrate the pattern of alternation. In (5) we cite examples where ku- is maintained in tact before a consonant, and in (6) we give examples where the vowel of this prefix is dropped.

(5)

ku-bo:l-a 'to steal'	ku-won-a 'to see'	ku-viv-a 'to be ripe'
ku-da:r-a 'to touch'	ku-zi:k-a 'to bury'	ku-je:r-a 'to be ashamed'
ku-yel-a 'to be full'	ku-gi:t-a 'to pull'	ku-mal-a 'to finish'
ku-ñakul-a 'to claw'	ku-l-a 'to cry'	ku-lip-a 'to pay'
ku-re:b-a 'to stop'	ku-his-a 'to feel'	ku-'e:t-a 'to blame'

(6)   x-pik-a 'to cook'   x-pe:nd-a 'to like'   x-fuɫ-a 'to forge'

           x-fa:ñ-a 'to do'   x-tek-a 'to laugh'   x-ti:nd-a 'to cut'

           x-tafun-a 'to chew'   x-tu:ɫ-a 'to calm down' x-so:m-a 'to read'

           x-su:l-a 'to want'   x-chi:mbiɫ-a 'to flee' x-chor-a 'to engrave'

           x-shi:k-a 'to hold'   x-shom-a 'to sew'   x-kos-a 'to err'

           x-kas-a 'to hear'

From the preceding examples it can be readily seen that the vowel of ku- is retained before voiced consonants and the laryngeals h and ?, but elides before all the voiceless obstruents. The elision of the vowel is accompanied by the conversion of the velar stop k to its continuant counterpart x. We assume that two processes are at work in deriving x from underlying ku-; namely, a rule we call Vowel Drop, which is responsible for eliding the vowel of the infinitive prefix when it precedes a voiceless obstruent, and a rule we call Spirantization, which spirantizes a stop consonant in a prefix if that stop comes to be in a pre-consonantal position.

A further complication in the phonology of the infinitive prefix is provided by verbal roots which have been borrowed from Arabic or Somali roots containing an initial x or q. In general, Chimwi:ni speakers pronounce both of these sounds as x, though certain speakers may retain q some of the time (in an effort to remain closer to the original). The infinitive forms of such verbs are given in (7).

(7)   xada'-a 'to cheat'

       xasa:r-at-a 'to lose (money, reputation)'

       xo:f-a 'to fear'

       xo:x-a 'to become arrogant'

       qahir-a/xahir-a 'to force'

       qaribiɫ-a/xaribiɫ-a 'to go close to'

       qiya:s-ish-a/xiya:s-ish-a 'to measure'

       qusudiɫ-a/xusudiɫ-a 'to intend'

These roots exhibit a Ø allomorph of the infinitive prefix. The Ø form of the prefix can be accounted for by assuming that in addition to the

rules of Vowel Drop and Spirantization there is also a rule of Cluster
Simplification, which can be formulated (roughly) as in (8).

(8) $\quad x \longrightarrow \emptyset / \underline{\hspace{1cm}} \begin{Bmatrix} x \\ q \end{Bmatrix}$

The derivation of xo:f-a, then, would be as follows:

(9)   ku-xo:f-a

      k-xo:f-a   Vowel Drop

      x-xo:f-a   Spirantization

      xo!f-a   Cluster Simplification

The major alternative to this sort of analysis would be to assume
that the infinitive prefix has two underlying shapes, /ku/ and $\emptyset$, and
that the latter allomorph is selected by x/q-initial roots. Some evidence
will be given later which indicates that it would be incorrect to claim
that x/q-initial roots occur with a $\emptyset$ form of the infinitive marker.

Let us consider now the proposed rule of Vowel Drop in more detail.
We have seen that the vowel u, a high vowel, drops from ku- when a
voiceless obstruent follows. Examination of additional prefixes in-
dicates that Vowel Drop is not restricted to just the infinitive prefix,
but rather that it affects a wider range of prefixes, all of which
contain a high vowel. Take, for instance, the Class 7 and Class 8
noun class prefixes chi- and zi-. In (10) we give examples where these
prefixes are maintained intact, while in (11) we cite cases where their
vowel is elided.

(10)   chi-barza 'stone bench'   zi-barza (pl.)

         chi-jamu 'plate'   zi-jamu (pl.)

         chi-ga:ya 'shard'   zi-ga:ya (pl.)

         chi-la:vi 'fish trap'   zi-la:vi (pl.)

         chi-mizo 'throat'   zi-mizo (pl.)

         chi-no:ło 'sharpening   zi-no:ło (pl.)
                    stone'

         chi-re:za 'razor blade'   zi-re:za (pl.)

chi-wała 'scar'   zi-wała (pl.)

chi-ye:mbe 'hoe'   zi-ye:mbe (pl.)

(11)   sh-pete 'ring'   s-pete (pl.)

          sh-finiko 'lid'   s-finiko (pl.)

          sh-ṭana 'comb'   s-ṭana (pl.)

          sh-toka 'axe'   s-toka (pl.)

          sh-kapu 'basket'   s-kapu (pl.)

          sh-qalbi 'little heart' s-qalbi (pl.)
          ~sh-xalbi   ~s-xalbi

Notice that the NCP <u>chi</u>- has the alternant <u>sh</u>- (phonetic ₍š₎)'
when a voiceless obstruent follows. Clearly, this alternation can
be attributed to the effects of the same two principles as derive <u>x</u>
from <u>ku</u>-: namely, Vowel Drop and Spirantization. Underlying /chi-kapu/
is converted to /ch-kapu/ due to the presence of a voiceless obstruent
following /chi/. Spirantization then converts /ch-kapu/ to <u>sh-kapu</u>
since a stop in a prefix must spirantize if it is pre-consonantal.

There are several prefixes in Chimwi:ni of the shape <u>chi</u>- in
addition to the NCP illustrated above. They include the concordial
prefixes that agree with a Class 7 nominal, the 1 pl. subject and
object prefixes, the conditional prefix, and the past continuative
prefix. All of these prefixes assume the shape <u>sh</u>- in position before
voiceless obstruents, as is indicated by the examples in (12).

(12)   (a) sh-kapu sh-kułu 'a large basket'
              cf.
              sh-kapu chi-gobe 'a small basket'

              chi-jamu sh-piya 'a new plate'
              cf.
              chi-jamu chi-mo:yi 'one plate'

          (b) sh-pish-ił-é 'we cooked'   cf. chi-reb-e:ł-é 'we stopped'
              wa-sh-pik-il-i:l-e 'they cooked for us' cf. wa-chi-reb-el-e:l-e
                                                      'they stopped for us'

    (c)   wa-sh-pik-a   'they were cooking; if they cook'
       cf. wa-chi-vu:ł-a 'they were fishing; if they fish'

       wa-sh-tez-a   'they were playing; if they play'
     cf. wa-chi-darbat-a 'they were getting ready; if they
                            get ready'

It is possible for there to be more than one occurrence of a /chi/ prefix in a verbal form. Notice that since /chi/ begins with a voiceless obstruent, it could possibly condition the deletion of a preceding prefixal high vowel. But /chi/ also is eligible to undergo the elision of its high vowel when it precedes a voiceless obstruent. The question then arises as to how the language treats successive occurrences of prefixes of the shape /chi/. Consider the data in (13).

(13)   (a)   sh-chi-vu:ł-a   'we were fishing; if we fish'
               sh-chi-łim-a   'we were cultivating; if we cultivate'

      (b)   sh-chi-pik-a   'we were cooking; if we cook'
              sh-chi-fum-a   'we were weaving; if we weave'

Subject prefixes precede the past continuative/conditional prefix /chi/ (cf. wa-chi-vu:ł-a 'they were fishing; if they fish'). It can be seen from (13a) that the 1 pl. subject prefix /chi/ undergoes Vowel Drop when it precedes the past continuative/conditional prefix /chi/. In (13b), we see that the past continuative/conditional prefix does not undergo Vowel Drop before a voiceless obstruent if the 1 pl. subject prefix has undergone the rule. Compare <u>wa-sh-pik-a</u> 'they were cooking; if they cook', where we see that the past continuative/conditional prefix does elide its vowel when it is preceded by a prefix that does <u>not</u> lose its vowel. There is, of course, a good reason that we get <u>sh-chi-pik-a</u> rather than, say, *<u>sh-sh-pik-a</u>. The language does not generally permit three consonant clusters nor geminates in pre-consonantal position.

    It would seem plausible then to formulate the rule of Vowel Drop as in (14).

(14) $\begin{bmatrix} +\text{high} \end{bmatrix}$
        V_a $\text{-----}\rightarrow \emptyset \quad / \quad \begin{Bmatrix} \# \\ V \end{Bmatrix} \quad C \quad \underline{\qquad} \quad + \quad \begin{matrix} C \\ [-\text{voice}] \end{matrix} \quad V$

condition: V_a is contained within certain
             prefixes (to be specified below)

This formulation of Vowel Drop will yield the correct surface forms,
provided we guarantee that given an underlying representation such as
/chi-chi-pik-a/ 'we were cooking' the rule applies first to the
leftmost /chi/ prefix. Given that stipulation, /chi-chi-pik-a/ will
be converted to /sh-chi-pik-a/ by Vowel Drop (and Spirantization).
Application of Vowel Drop to the 1 pl. subject prefix /chi/ (which
is leftmost in the structure) prevents the past continuative/conditional
prefix from undergoing Vowel Drop, since the conditions specified in
(14) will not be satisfied: in particular, a consonant cluster will
precede.

        If rule (14) were applied simultaneously to all relevant segments
in the structure /chi-chi-pik-a/, both /chi/ prefixes would meet the
structural description of (14) and would delete their vowels. The
resulting form would be the incorrect *shshpika. On the other hand,
if (14) were applied first to the rightmost prefix, we would derive
*chi-sh-pika. This is a possible Chimwi:ni word (see below), but it
doesn't mean 'we were cooking; if we cook'.

        The above data thus provide evidence in favor of the claim that
the application of a phonological rule to one part of a structure may
affect the possibility of applying that very same rule to some other part.
The reader is referred to Kenstowicz and Kisseberth (1977) for additional
discussion of this property of phonological rules.

        Additional evidence that Vowel Drop applies first to the leftmost
occurrence of an eligible prefix is provided by the negative past tense
verbal form. This particular form shares with a number of other verbal
tenses the property of requiring the presence of what appears to be the
infinitive prefix /ku/. The structure of the negative past tense form
is Negative Prefix-Subject Prefix-/ku/-(Object Prefix)-Verb Stem-a.
Some examples are given in (15).

(15) nt^ha-wa-ku-mo:ł-a   'they didn't shave!'
         nt^ha-wa-x-pik-a   'they didn't cook'
         nt^ha-sh-ku-vu:k-a   'we didn't go away'
         nt^ha-sh-ku-tez-a   'we didn't play'
         nt^ha-sh-ku-kos-a   'we didn't miss'

Notice that the prefix /ku/ undergoes Vowel Drop in nt^hawaxpika,
showing that it is eligible to undergo the rule; the 1 pl. subject
prefix /chi/ undergoes Vowel Drop in a form such as nt^hashkuvu:ka
since it precedes the voiceless obstruent of /ku/. The crucial example
is one like nt^hashkukosa, which shows that once Vowel Drop applies to
/chi/ it cannot also apply to /ku/, even though /ku/ precedes a voice-
less obstruent. Pronunciations such as *nt^hashxkosa or *nt^hachixkosa
cannot be used to convey the meaning 'we didn't miss'.

Let us summarize briefly. We have given evidence that prefixes
of the shape /ku/, /chi/, and /zi/ in Chimwi:ni all elide their vowel
when preceding a voiceless obstruent, subject to the condition that
the vowel in question be in the context $\left\{ \begin{matrix} \# \\ \overline{V} \end{matrix} \right\}$ C ____ CV. Notice that
each of these prefixes begin with an obstruent consonant and contains
a high vowel. There are only two other prefixes in Chimwi:ni that
possess these characteristics: the negative prefix si- and the 2 sg.
object prefix xu-. The negative marker si- also undergoes Vowel Drop,
as the data in (16) attest.

(16)   s-pik-é 'don't cook!'   cf.   si-bo:ł-é   'don't steal!'
         s-fakat-é 'don't run!'   si-vu:nd-é 'don't break!'
         s-tek-é   'don't laugh!'   si-da:r-é   'don't touch!'
         s-kos-é   'don't miss!'   si-gaf-é   'don't make a
                                                          mistake!'

Since the consonant of si- is both a continuant and voiceless, the rules
of Spirantization and Voicing Assimilation apply vacuously in the
derivation of examples such as s-pik-é .

The 2 sg. object prefix xu- retains its vowel before all consonants,
whether voiced or voiceless. Among prefixes of the shape obstruent plus
high vowel, it is the only one that does not undergo Vowel Drop. We
will assume that it is simply marked as an exception to the rule.

The following examples illustrate the retention of the vowel of xu-
both when a voiced and also when a voiceless consonant follows.

(17)   xu-bish-ił-e   '(he) hit you'
         xu-pik-il-i:l-e   '(he) cooked for you'
         wa-xu-gi:s-ił-e   'they pulled you'
         wa-xu-korsh-e:z-e 'they reared you'

Prefixes of the shape obstruent plus low vowel (no mid vowels
occur in Chimwi:ni prefixes) do not elide their vowel in any pre-
consonantal environment. The future tense marker /ta/ and the con-
ditional prefix /ka/ illustrate this point.

(18)   wa-ta-ku-gi:t-a   'they will pull'
         ka-so:m-á   'if he read'
         ka-vu:ł-á   'if he fished'

The future prefix always occurs in conjunction with a following /ku/
and never loses its vowel in this context. The conditional prefix
/ka/, on the other hand, can occur before a full range of sounds, but
it also retains its vowel.

For the time being let us assume that Vowel Drop affects only
prefixes with the structure obstruent plus high vowel. We can now
revise (14) as follows:

(14)' $\begin{bmatrix} V \\ +\text{high} \\ +\text{prefix} \end{bmatrix} \longrightarrow \emptyset \ / \ \begin{Bmatrix} \# \\ V \end{Bmatrix} + [\text{-sonor}]^{C} \ \underline{\hspace{1cm}} + CV$

         (where [+prefix] is an ad hoc device indicating that somehow
         this rule must be limited to prefixes; the appropriate
         formalism for accomplishing this is beyond the scope of the
         present paper)

We have ignored up to this point a number of complexities regarding
Vowel Drop. As formulated in (14)', the rule of Vowel Drop would apply
in certain cases where it must not apply. We will discuss these cases
now. Consider the data in (19).

(19)　(a)　chi-sima　'well'　zi-sima　(pl.)

chi-siwa　'island'　zi-siwa　(pl.)

chi-su:to　'gift from　zi-su:to (pl.)
bridegroom'

chi-sala　'prayer rug'　zi-sala　(pl.)

chi-shepe　'old cloth'　zi-shepe　(pl.)

chi-shi:ndo　'noise'　zi-shi:ndo (pl.)

(b)　chi-som-e:l-é　'we read'

chi-safir-i:l-é　'we traveled'

chi-shi:nz-il-é　'we won'

chi-show-e:t-é　'we put on new clothes'

(c)　si-so:m-é　'don't read!'

si-she:r-é　'don't slide!'

si-sa:yd-é　'don't help!'

si-shi:k-é　'don't hold!'

The preceding data show that the prefixes with initial s, z, or ch
fail to elide their vowel before the voiceless coronal continuants
s and sh. In other words, Vowel Drop will not apply if it will result
(after Spirantization and voicing assimilation) in the sequences ss,
ssh, shs, or shsh. It is just the coronal continuants that lead to
the retention of the vowels of the prefixes illustrated in (19); vowels
are dropped before coronal stops and affricates.

(20)　(a)　sh-tana　'comb'　s-tana　(pl.)

sh-toka　'axe'　s-toka　(pl.)

(b)　sh-tesh-el-é　'we laughed'

sh-tande:z-é　'we spread it'

sh-chimbi:l-é　'we ran away'

(c)　s-tek-é　'don't laugh!'

s-ta:ndaz-é　'don't spread!'

s-chi:mbil-é　'don't run away!'

In order to prevent Vowel Drop from applying to the forms in (19),
we must revise (14)' as follows:

(14)''

$$\begin{bmatrix} V \\ +\text{high} \\ +\text{prefix} \end{bmatrix} \dashrightarrow \emptyset \ / \ \begin{Bmatrix} \# \\ V \end{Bmatrix} \begin{bmatrix} C \\ -\text{sonor} \\ +\text{coron} \end{bmatrix} \underline{} \begin{bmatrix} C \\ -\text{voice} \\ -\begin{bmatrix} +\text{coron} \\ +\text{cont} \end{bmatrix} \end{bmatrix}$$
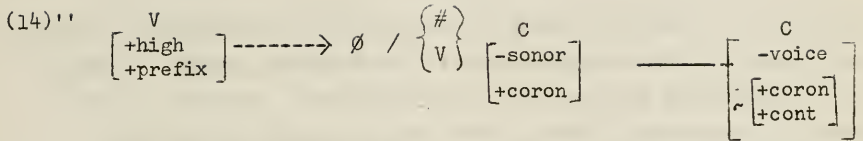
This rule now says that a high vowel in a prefix that has a coronal obstruent will delete only if followed by a voiceless obstruent that is not a coronal continuant.

Another environment where Vowel Drop fails to apply is before object prefixes. The object prefixes of the shape /chi/ (indicating a 1 pl. object or an object belonging to NC 7) and /xu/ (indicating a 2 sg. object) are the only ones that have the right shape to induce Vowel Drop (i.e. they have an initial voiceless obstruent). Vowel Drop fails to apply, however, to a prefix that precedes these object prefixes. For instance, in wa-chi-xu-big-a 'if they hit you', the conditional prefix chi- does not drop its vowel before xu-, even though *washxubiga is a form that in no way violates Chimwi:ni surface phonetic patterns. Similarly, in si-chi-ɬum-é 'don't bite it (NC 7)', the negative prefix si- resists Vowel Drop before the chi- object prefix referring to nouns of class 7. Finally, in chi-xu-reb-e:ɬ-é 'we stopped you', the 1 pl. subject prefix chi- retains its vowel before xu-.

It is only prefixes functioning as object markers that fail to trigger Vowel Drop; other prefixes of the appropriate phonetic structure do trigger the rule. Examples where the chi- conditional prefix triggers Vowel Drop were cited above. The future tense marker also induces Vowel Drop.

(21) sh-ta-ku-vu:ɬ-a   'we will fish'

      s-ta-x-fu:nguk-a   'they (e.g. zoɬoko 'windows') will be open'

      s-ta-x-fo:fat-a   'they (e.g. ngo:mbe 'cattle') will go
                               to graze'

The failure of Vowel Drop to apply before the object prefixes provides supporting evidence for our earlier account of how an under-lying representation such as /chi-chi-pik-a/ 'if we cook' is converted to shchipika rather than *chishpika or *shshpika. We claimed that

application of Vowel Drop first to the leftmost prefix created a context that blocked the rule's application to the following prefix. Consider now the underlying representation /chi-chi-pik-e/ 'that we cook it (referring to a class 7 noun)'. This representation is realized phonetically as chishpika. That is, the object prefix next to the verb root undergoes Vowel Drop but not the subject prefix chi-. This follows from the proposed analysis. The subject prefix is prevented from undergoing the rule since Vowel Drop fails to apply to a prefix that precedes an object prefix. The chi- object prefix is in the appropriate environment to undergo Vowel Drop since it is followed by the verb root /pik/ 'cook' which has an initial voiceless obstruent and is not preceded by a consonant cluster (thanks to the fact that the subject prefix retained its vowel). The contrast between sh-chi-pik-a 'if we cook' and chi-sh-pik-e 'that we cook it (class 7)' shows clearly that the susceptibility of a prefix further to the right to undergo Vowel Drop is dependent on whether a prefix further to the left undergoes the rule.

We will show later that other rules of Chimwi:ni prefix morphophonology are blocked in position before an object prefix. Thus the failure of Vowel Drop to apply here is part of a more general pattern. Description of this phenomenon could take different forms. For example, one might mark object prefixes in the lexicon as being exceptions to Vowel Drop in that they do not trigger the rule's application. (See Kenstowicz and Kisseberth (1977) for discussion of environmental exceptions.) Alternatively, one might claim that there is a boundary stronger than just morpheme boundary between a prefix and an object prefix. This strong boundary could then serve to block application of Vowel Drop (as well as other, similarly constrained rules dealt with later). The boundary solution provides greater generalization (one does not have to mark the prefixes for which rules they fail to trigger; a rule will automatically fail to apply before the object prefixes due to the strong boundary located there), though we have no other arguments favoring it over the environmental exception approach.

Yet another environment exists where Vowel Drop fails to apply,

though the facts here are more complicated and a full treatment is not
required for our present purposes. Consider the data in (22).

(22)   chi-t̲o 'gem'   zi-t̲o (pl.)

         chi-ti 'chair'   zi-ti (pl.)

,   chi-fo 'mortality'

         chi-fu 'gizzard' zi-fu (pl.)

         chi-ke' 'in a feminine way'

         ku-f-a 'to die'

         ku-t-a 'to pound'

         ku-ch-a 'to dawn'

         si-f-é 'don't die!'

         si-t-é 'don't pound!'

         u-si-ch-e 'let it not dawn'

         chi-f-a 'if he dies'

         chi-t-a 'if he pounds'

         u-chi-ch-a'if it dawns'

These examples show that Vowel Drop fails to apply when a prefix (of
the relevant shape) occurs in the environment ___+CV≠, where CV may
either be a non-verbal root (as in chi-ti 'chair') or a verb root of
the shape C plus the final vowel that characterizes all Chimwi:ni verbal
forms (as in ku-f-a 'to die'). We shall refer to this ___+CV≠ environ-
ment as a "monosyllabic" environment.

    Accent in Chimwi:ni is normally on the penultimate syllable of
the word; consequently, the retention of the prefixal vowel in an
example like chi-ti might be accounted for in terms of restricting
Vowel Drop to unaccented vowels. This may be the correct way of
looking at the problem, but certain difficulties with this view ought
to be noted. First of all, if the locative suffix -ni is added to
a noun, accent will ordinarily occur on the syllable immediately
preceding -ni. That syllable is also lengthened. (Chimwi:ni does not

have the well-known Bantu rule that lengthens the penultimate vowel
of a word, but it is the case that certain suffixes induce the lengthening
of a preceding vowel.) This shift of accent does not, however, lead to
the loss of the prefixal vowel in examples such as <u>chi-ti:-ni</u> 'on the
chair'. Secondly, in the negative imperative accent is always ultimate
rather than penultimate. The prefixal vowel in <u>si-f-é</u> 'don't die!' is
thus unaccented; nevertheless, the prefixal vowel is retained. There
is thus no direct connection (on the surface at least) between the
retention of a prefixal vowel and the location of accent.

For our present purposes, we will simply assume that (14)'' must
be modified so that it fails to operate in monosyllabic environments.
The formulation of this constraint will not be explored here, since
additional complexities arise in connection with the behavior of prefixes
that precede roots of the form -C- (such as -<u>f</u>- 'die') when derivational
and other affixes are added to them.

4. <u>Vowel Drop-II.</u>

In section 3 we examined the application of Vowel Drop to prefixes
of the shape CV-, where C is an obstruent and V is a high vowel. But
as we saw in section 2, Chimwi:ni also has a number of prefixes of the
shape CV- where C is a sonorant and V is a high vowel. Let us look
now at the behavior of these prefixes when they appear in pre-consonantal
environments. (23) illustrates the behavior of the 1 sg. subject prefix
<u>ni-</u>.

(23) m-bo:zełé   'I stole'   m-p^{h}ishiłé   'I cooked'
      n-ḏari:lé   'I touched' n-ṯ^{h}eshełé   'I laughed'
      ŋ-gafi:łé   'I erred'   ŋ-k^{h}ałe:nṯ^{h}é 'I sat'
      n-vu:nziłé   'I broke'   n-fake:té   'I ran'
      n-zami:łé   'I sank'   n-some:łé   'I read'

Note that the 1 sg. subject prefix appears consistently without a vowel,
regardless of the nature of the following consonant. The nasal consonant
of this prefix assimilates to a following stop consonant but remains
<u>n</u>- when it precedes a continuant. Voiceless stops are aspirated when
they are preceded by the 1 sg. (nasal) prefix.

We have claimed that the underlying shape of the 1 sg. prefix is
ni-. The data in (23) obviously do not provide any evidence that the
prefix contains a vowel. One source of evidence for an underlying
vowel comes from cases where the 1 sg. subject prefix is followed
immediately by an object prefix. In such a situation, the 1 sg. prefix
appears as ni-. Some examples: ni-wa-pikili:lé 'I cooked for them',
ni-xu-we:né 'I saw you', ni-chi-ji:lé 'I cooked it (class 7)', etc.
ni- also retains its vowel in what we have called "monosyllabic"
environments. Thus: ni-f-e 'that I die', ni-j-e 'that I eat', ni-n-e
'that I drink', etc.

We have seen in (23) that ni- elides its vowel regardless of the
voicing of the following consonant, and thus it seems (at first glance
anyhow) that a rule different from Vowel Drop is at work. Recall that
Vowel Drop operates only on a prefix that precedes a voiceless obstruent.
Nevertheless, the rule that elides the vowel of ni- is very similar
to Vowel Drop in that it fails to apply before object prefixes and
also fails to apply in monosyllabic environments. For the moment, let
us refer to the rule affecting ni- as Vowel Drop-II and the rule discussed
in section 3 as Vowel Drop-I.

One of the questions we wish to discuss in this section is the
extent to which Vowel Drop-I and Vowel Drop-II should be regarded as
instances of a single rule. That is, are these two phenomena really
significantly connected? Before looking a little further into this
question, let us show that prefixes of the shape CV-, where C is a
sonorant and V is a high vowel, generally undergo Vowel Drop-II. The
2 pl. subject and object prefix ni- and the 3 sg. class 1 object
prefix -mu- both undergo Vowel Drop-II, as (24) demonstrates.

(24)   wa-n-bishile 'they hit you pl.'
        wa-m-bishile 'they hit him'
        wa-n-pikili:le 'they cooked for you pl.'
        wa-m-pikili:le 'they cooked for him'
        wa-n-gi:sile 'they pulled you pl.'
        wa-m-gi:sile 'they pulled him'
        cf.
        na-ni-j-e 'that he eat you pl.'   na-mu-j-e 'that he eat him'

Notice, incidentally, that the n̲ of ni̲- 2 pl. does not assimilate the point of articulation of a following stop, unlike the n̲ of the 1 sg. ni̲- which does assimilate. Also notice that voiceless stops are not aspirated after the nasal of either the 2 pl. or the 3 sg. whereas voiceless stops are aspirated after the nasal of the 1 sg. The 1 sg. behaves in a systematically distinct fashion from the 2 pl. and the 3 sg.; we will detail these contrasting patterns of behavior in a future paper.

The noun class/agreement prefixes mu̲- and li̲- also show the general pattern of deletion before all consonants, though once again the vowel of these prefixes is retained in monosyllabic environments.

(25)   m-fuzi   'smith'   wa-fuzi (pl.)
         m-za:zi   'parent'   wa-za:zi (pl.)
         m-garwa   'fisherman' wa-garwa (pl.)
         m-yakazi   'prostitute' wa-yakazi (pl.)

         cf.
         mu-j-a 'one who eats'   wa-j-a (pl.)
         mu-ke 'woman'   wa-ke (pl.)

         m-paka 'boundary'   mi-paka (pl.)
         m-kono 'arm'   mi-kono (pl.)
         m-bu:yu 'baobab tree'   mi-bu:yu (pl.)
         m-gahawa 'hotel'   mi-gahawa (pl.)

         cf.
         mu-ti .'tree'   mi-ti (pl.)
         mu-to 'pool of water' mi-to (pl.)
         mu-j-o 'foods'

         l-bawa 'feather'   m-bawa (pl.)
         l-pe:ło 'broom'   m-pʰe:ło (pl.)
         l-go:ngo 'midrib'   ŋ- go:ngo (pl.)
         l-kuta 'wall'   ŋ-kʰuta (pl.)

         cf.
         l-kuta: li-łe 'a long wall'
         ni-li-j-e 'that I eat it (class 11)'

Examination of the data in (25) reveals not only that prefixes of the
shapes mu- and li- undergo Vowel Drop-II, but also that the class 4
prefix mi- does not elide its vowel in any context. mi- functions
as the plural prefix for roots that take class 3 mu- in the singular.
Thus we have m-bu:yu 'baobab tree', but mi-bu:yu 'baobab trees'.
Apparently mi- must be regarded simply as an exception to Vowel Drop-II,
though it it not entirely surprising that it should fail to undergo
the rule. Were it to do so, the singular and plural forms for 'baobab
tree' and nouns like it would be merged.

Let us return now to the question of whether Vowel Drop-I and
Vowel Drop-II should be identified as the same rule. The primary
difference between the two rules is that a high vowel in an obstruent
prefix such as ku- deletes only before voiceless obstruents and not
voiced consonants, whereas the high vowel in sonorant prefixes drops
before all consonants. The fact that both Vowel Drop I and II fail
to apply before object prefixes and in monosyllabic contexts supports
the claim that the two rules are in fact significantly connected.
However, since there are other (unconnected) processes that fail to
operate across the boundary between a prefix and an object prefix,
failure of Vowel Drop I and II to operate in this particular context
cannot be said to provide much evidence that the two rules are funda-
mentally the same. Thus it is just the fact that the two rules both
(1) operate on CV- prefixes containing high vowels and (2) are blocked
in monosyllabic contexts that strongly supports regarding them as really
one rule.

One additional piece of evidence can be brought to bear on the
question. Examine the data in (26).

(26)   -p- 'give'

         xpa 'to give'
         spé 'don't give!'
         mpa 'the one who gives' (cf. wapa 'those who give'
         namp^he 'that he give me (it)'
         nanpe 'that he give you pl.(it)'
         nampe 'that he give him(it)'
         nashpe 'that he give us(it)'

The root -p- 'give' is exceptional in that although it would be expected to induce the retention of a preceding prefixal vowel (i.e. *ku-p-a is expected, parallel to ku-f-a, and *si-p-é is expected, parallel to si-f-é), it nevertheless does permit that vowel to delete. Thus -p- is a morpheme that given its phonological structure should serve to block Vowel Drop, but exceptionally permits the rule to apply. This kind of exceptionality has not, to our knowledge, received much attention within generative approaches to phonological analysis. An adequate theory of exceptions must, however, be capable of describing such behavior. The point, however, that is relevant for our present discussion is that -p- behaves exceptionally both for prefixes that undergo Vowel Drop-I and also for prefixes that undergo Vowel Drop-II. The former rule applies in the case of spé whereas the latter rule operates in the case of mpa. Thus, a morpheme that behaves exceptionally with respect to Vowel Drop-I also behaves exceptionally with respect to Vowel Drop-II. The two rules display parallel behavior, even in the case of isolated peculiarities such as the exceptionality of -p-. This parallelism supports the view that the two really are the same rule.

Incidentally, it should be pointed out that prefixes that do not undergo either Vowel Drop-I or Vowel Drop-II never delete their vowel in the environment of -p- 'give'. For example, we noted earlier that xu- 2 sg. object prefix is an exception to Vowel Drop-I. It never undergoes the rule. It also does not lose its vowel when next to -p-, as ni-xu-pikili:lé 'I cooked for you' shows. This observation supports the claim that it is Vowel Drop I and II that is responsible for forms like xpa, spé, mpa, etc. (even though the application of Vowel Drop I and II is not ordinarily possible in such monosyllabic environments).

Assuming that it is proper to collapse Vowel Drop-I and Vowel Drop-II into a single rule, we can replace (14)'' with (27) below.

(27)   Vowel Drop

$$
\begin{bmatrix}
+\text{high} \\
+\text{prefix} \\
\begin{Bmatrix} _a\langle -\text{sonor}\rangle_a \\ [+\text{sonor}] \end{Bmatrix}
\end{bmatrix}
\rightarrow \emptyset \Big/
\begin{Bmatrix} \# \\ V+ \end{Bmatrix}
C \underline{\hspace{1cm}} + \quad {}_b\langle -\text{voice}\rangle_b \, C \quad V
$$

Condition: if a, then b

In section 3 we saw that prefixes of the shape CV-, where C is an obstruent and V is a high vowel, are subject to Vowel Drop when a voiceless obstruent follows. In the present section we have seen that prefixes of the shape CV-, where C is a sonorant and V is a high vowel, are subject to Vowel Drop regardless of the nature of the following consonant. There is one prefix that was ignored in the discussion of both classes of prefixes -- namely, the habitual prefix <u>hu</u>-. Whether <u>h</u> is to be regarded as an obstruent or a sonorant is unclear to us; in any case, this prefix never undergoes Vowel Drop. <u>hu</u>- remains unaltered before both voiced and voiceless consonants.

Two types of prefixes never undergo Vowel Drop: prefixes of the shape Ca- and prefixes of the shape V-.

5. The Treatment of Vowel-Vowel Sequences.

So far we have examined the shapes of prefixes when they occur in a pre-consonantal environment. In the present section we look at what happens to prefixes when they stand in a pre-vocalic position. Let us consider the behavior of the infinitive prefix <u>ku</u>- first.

(28)   k-aːɬ-a   'to sow'   cf. aɬ-á   'sow!'
        k-eːɬez-a 'to explain'   eɬez-a 'explain!'
        k-oːɬok-a 'to go'   oɬok-a 'go!'
        k-iːz-a   'to refuse'   iz-á   'refuse!'
        k-uːz-a   'to sell'   uz-á   'sell!'

The imperative forms cited in the right-hand column in (28) show that the verb roots 'sow', 'explain', 'go', 'refuse', and 'sell' are vowel-initial. The left-hand column shows that the infinitive prefix <u>ku</u>- deletes its vowel when followed by a vowel-initial root. Furthermore, the loss of the prefix vowel is accompanied by the lengthening of the initial vowel of the following morpheme. Thus /ku-aɬ-a/ becomes <u>kaːɬa</u>, etc.

The data in (28) can be accounted for by postulating a rule of Vowel Coalescence, which will roughly have the form given in (29).

(29)   Vowel Coalescence

$$\begin{bmatrix} V \\ +High \end{bmatrix} \quad V$$
$$1 \quad \quad 2 =====\rangle \quad \emptyset \quad \begin{matrix} 2 \\ [+long] \end{matrix}$$

Vowel Coalescence in Chimwi:ni is characteristic not just of the
infinitive prefix, but of most prefixes of the shape CV-, where V
is a high vowel and C may be either an obstruent or a sonorant. The
following prefixes are subject to Vowel Coalescence: ku-, all prefixes
of the shape chi-, the negative si-, the habitual hu-, both ni-
functioning as a 1sg. subject/object prefix and also ni- functioning
as a 2 pl. subject/object prefix, xu- 2 sg. object prefix, li-
noun class/agreement prefix, zi- noun class/agreement prefix.
Some examples are given in (30).

(30)   a. chi- 1 pl. subject/object prefix

            ch-a:sh-e 'that we light (it)'   cf. ash-á 'light!'
            ni-ch-o:ñesh-e 'that you pl. show us' oñesh-a 'show!'

        b. si- negative prefix

            s-a:nik-é 'don't spread (it) out to dry' cf. anik-a
            s-o:w-é 'don't bathe'   cf. ow-á
            s-i:nam-é 'don't bend over' cf. inam-a

        c. hu- habitual prefix
            h-i:nam-a 'he bends over'   cf. inam-a
            h-e:nd-a 'he goes' cf. end-á

        d. xu- 2 sg. object prefix
            wa-ta-x-a:fish-a 'they will forgive you' cf. afish-a
            chi-x-u:lil-e 'that we buy (it) for you' cf. uɫ-á 'buy!'
        e. ni- 2 pl. subject/object prefix
            wa-ta-ki-n-a:fish-a 'they will forgive you pl.'
            n-o:w-e 'that you pl. bathe'
            n-u:z-e 'that you pl. sell'

Prefixes of the shape Ca- do not regularly undergo Vowel Coalescence; instead, a glottal stop is inserted between the vowel a̱ and a following vowel. This phenomenon can be illustrated by citing forms containing the hypothetical prefix ka̱- and the 3 pl. subject/object prefix wa̱- (class 2).

(31)   a.   hypothetical prefix ka̱-

ka-'an̲d̲ik-á   'if he had written'
ka-'epuk-á   'if he had gotten out of the way'
ka-'ow-á   'if he had bathed'
ka-'iz-á   'if he had refused'
ka-'uz-á   'if he had sold'

b.   t̲a-ku-wa-'an̲d̲ikił-a   'he will write to them'
t̲a-ku-wa-'epuk-a   'he will avoid them'
wa-'ow-e:ł-e   'they washed'
wa-'uz-ił-e   'they bought (it)'

The data in (31) might lead one to suggest that there is a rule of Glottal Stop Insertion similar to (32) below.

(32)   Glottal Stop Insertion

$$\emptyset \longrightarrow \text{'} / a \underline{\quad} V$$

We will attempt to argue (see below) that (33), and not (32), is the correct form of the rule.

(33)   Glottal Stop Insertion

$$\emptyset \longrightarrow \text{'} / V \underline{\quad} V$$

We have shown so far that prefixes of the shape CV-, where V is a high vowel, generally undergo Vowel Coalescence when a vowel follows. Prefixes of the shape Ca-, on the other hand, are ordinarily separated from a following vowel by a glottal stop. There are, however, a few instances where Ca- prefixes appear to undergo Vowel Coalescence. Consider the data in (34).

(34)   a.   wa- noun class/agreement prefix (class 2)

        wa-'imb-a   'those who sing'   cf. imb-á 'sing!'
        wa-'uɫ-a   'those who buy'   uɫ-á 'buy!'
        wa-'oɫok-a 'those who go'   oɫok-a 'go!'

        but

        w-i:zi   'thief'
        w-a:na   'child'
        want^hu w-i:ngi 'many people'
        want^hu w-e:ma 'good people'

    b.   ma- noun class/agreement prefix (class 6)

        ma-'eɫez-o 'explanation'   cf. eɫez-a 'explain!'
        ma-'ondok-o 'departure'   cf. ondok-a 'depart!'

        but

        makofiya m-i:ngi 'many hats'
        ma'askari m-e:ma 'nice soldiers'

As can be seen from the above data, the noun class/agreement prefixes
wa- and ma- appear to undergo Vowel Coalescence with noun and adjective
roots that are vowel-initial, except if the root is derived from a
verb. Deverbal items are separated from wa- and ma- by a glottal
stop. The number of non-derived vowel-initial noun and adjective
roots is quite small, thus it is not unreasonable to regard examples
such as w-i:zi, w-e:ma, m-e:ma, etc., as exceptions. Even if we do
regard these items as exceptions, a problem arises: we originally
formulated Vowel Coalescence so as to limit it to a sequence of a
high vowel followed by another vowel. If that formulation is maintained,
then the prefixes wa- and ma- would have to (exceptionally) undergo a
rule whose structural description they do not satisfy. In other words,
a rule would have to apply even though its conditions were not satisfied
by the input structure. (Recall that to account for forms such as
xpa 'to give' and spé 'don't give!' we had to allow Vowel Drop to
apply exceptionally in an environment where it does not ordinarily

apply.) The alternative to this sort of treatment would be to remove
the requirement from Vowel Coalescence that the first vowel be a high
vowel. But if we were to remove that condition, we would predict that
the rule regularly applies to both high and non-high vowels. But it
does not. Only the high vowels regularly undergo the rule; a undergoes
Vowel Coalescence only exceptionally. It seems to us that an adequate
theory of exceptions must permit us to claim that Vowel Coalescence is
regularly limited to high vowels and that the low-voweled prefixes
wa- and ma- irregularly undergo the rule just in case they precede
a vowel-initial non-derived noun or adjective root.

We have discussed so far prefixes of the shape Ci/u- and Ca-.
What about prefixes of the shape V-? (35) illustrates the behavior of
such prefixes.

(35)   a.   u- class 12 noun class/agreement prefix

           w-i:z-o   'the act of refusing'
           w-e:łez-o 'explanation'
           w-o:sh-o 'the act of washing'
           w-u:mb-o 'creation'

       b.   i- class 5 and 9 subject/object prefix

           chi-y-e:łez-e 'that we explain it (class 5 or 9)'
           chi-y-u:z-e   'that we sell it (class 5 or 9)'
           y-ełe:z-a 'it (class 5 or 9) was explained'
               (note: a morphophonemic rule shortens the initial
                       vowel of the verb root in this example)

       c.   u- class 3 subject/object prefix

           w-a:sh-ił-e   'it (class 3) burned'
           ku-w-i:z-a   'to refuse it (class 3)'
           chi-w-u:ł-e   'that we buy it (class 3)'

The above data reveal that a prefix of the shape V- will glide to
the corresponding semi-vowel when a vowel follows; furthermore, that
following vowel is compensatorily lengthened. The process involved
can be formalized approximately as in (36).

(36)   Glide Formation

$$\begin{array}{cc} V & V \\ [+high] \\ 1 & 2 \end{array} ===\!\!> \begin{array}{cc} 1 & 2 \\ [-syll] & [+long] \end{array}$$

(Whether or not the above type of transformational rule provides
the best characterization of "compensatory lengthening" is a matter
that we cannot go into here.)

Actually, it is not just prefixes of the shape V- that are subject
to Glide Formation. Prefixes of the shape mu-, which would be expected
to undergo Vowel Coalescence, are also subject to Glide Formation.
The data in (37) illustrate this point.

(37)   a.   <u>mu</u>- class 1 object prefix

n-<u>t</u>^{h}a-mw-a:fish-a   'I will forgive him'
n-<u>t</u>^{h}a-mw-e:puk-a   'I will avoid him'
n-<u>t</u>^{h}a-mw-o:sh-a   'I will wash him'
n-<u>t</u>^{h}a-mw-i:ngiz-a   'I will allow him to enter'
n-<u>t</u>^{h}a-mw-u:lil-a   'I will buy (it) for him'

b.   <u>mu</u>- class 1 noun class/agreement prefix

mw-i:zi 'thief'
mw-e:nza 'friend'
mw-a:na 'child'
mw-a:l-a 'the one who sows'   cf. al-á 'sow!'
mw-e:puk-a 'the one who avoids' cf. epuk-à 'avoid!'
mw-o:sh-a 'the one who washes' cf. osh-á 'wash him!'

c.   <u>mu</u>- class 3 noun class/agreement prefix

mw-i:wa 'thorn'
mw-e:zi 'sun, moon'
mw-a:ngi 'cooked corn'
mw-i:z-o 'refusal'   cf. iz-á 'refuse!'
mw-e:nd-o 'trip'   cf. end-á 'go!'
mw-a:nz-o 'beginning' cf. anz-á 'begin!'

All <u>mu</u>- prefixes regularly assume the shape <u>mw</u>- before vowel-initial
roots, lengthening the following vowel. These changes take place

both before verb roots and also non-derived noun and adjective roots.

We have shown so far that Chimwi:ni does not tolerate successive vowels. When two vowels are brought together in the same word as a consequence of affixation, one of three morphophonemic processes comes into play: Vowel Coalescence, Glottal Stop Insertion, or Glide Formation. Which of these rules will apply in a given situation is largely, but not entirely, predictable on the basis of the phonological shape of the prefix. Prefixes of the shape V- are all subject to Glide Formation. Prefixes of the shape CV-, where V is a high vowel, regularly undergo Vowel Coalescence, but prefixes of the shape mu- unpredictably undergo Glide Formation instead. Prefixes with the low vowel a are regularly separated from a following vowel by a glottal stop, though wa- and ma- are subject to Vowel Coalescence before non-derived noun and adjective roots.

We propose to account for the above regularities as follows. We assume that Vowel Coalescence should be reformulated as in (38).

(38)   Vowel Coalescence

$$
\begin{array}{ccccccc}
+C & V & + & V \\
 & {[+high]} \\
1 & 2 & 3 & ====\!\Longrightarrow & 1 & \emptyset & 3 \\
 & & & & & & {[+long]}
\end{array}
$$

This rule will be applied first. It is limited to prefixes of the structure CV-. Prefixes of the shape mu- must be marked as exceptional in that they do not undergo the rule. The prefixes wa- and ma- must be marked as exceptions in that they do undergo the rule even though they do not meet the structural conditions (i.e. they have low vowels, not high vowels). wa- and ma- are exceptions however only before non-derived noun and adjective roots.

Next, we assume that Glide Formation has the form indicated in (36) above. It applies after Vowel Coalescence. It will affect V-prefixes, which were excluded from undergoing Vowel Coalescence, and also the mu- prefixes that were exceptions to Vowel Coalescence. Finally, we assume the existence of the rule of Glottal Stop Insertion suggested in (33). This rule will put a glottal stop between any two successive vowels within the word. It applies after Vowel Coalescence

and Glide Formation, and will affect only vowel sequences that have escaped the earlier rules.

The only examples discussed up to this point where Glottal Stop Insertion applies involves prefixes ending in the vowel a (such prefixes not being subject either to Vowel Coalescence or Glide Formation). One might therefore ask whether Glottal Stop Insertion should be limited to the sequence aV rather than generalized to all VV sequences. There does appear to be some motivation for assuming that Glottal Stop Insertion is the rule that applies as a kind of "last resort" to break up vowel sequences and that it will affect any vowel sequence that escapes the other two rules. The major piece of evidence supporting this view comes from examining data involving vowel-initial object prefixes. There are two such prefixes that we will refer to -- u (class 3 object prefix) and i (class 5 and class 9 object prefix).

(39)   ku-'u-zimiz-a 'to put it (class 3) out'
        ki-'i-ti:nd-a 'to cut it (class 5 or 9)'
        muti u-'i-vunzile nu:mba 'the tree smashed the house'
        ijiwe i-'u-bishile: muti 'the stone hit the tree'

The above data show that neither Vowel Coalescence nor Glide Formation apply to a vowel in a prefix that immediately precedes a vowel-initial object prefix. (Recall that the rule of Vowel Drop was also constrained from applying in the environment before an object prefix.) A glottal stop, however, is inserted between the two vowels. If Glottal Stop Insertion were restricted to the sequence aV we would not be able to explain the appearance of a glottal stop in the verbal forms listed in (39). If Glottal Stop Insertion affects all VV sequences, then the above data can be accounted for in a simple fashion. Vowel Coalescence and Glide Formation must be restricted so that they do not apply across the boundary between a prefix and an object prefix. Glottal Stop Insertion will not be so restricted. Consequently, when Vowel Coalescence and Glide Formation fail to affect the vowel sequences in (39), the rule of last resort -- Glottal Stop Insertion -- will come into play and separate the vowels with a glottal stop.

6. Vowel Fronting.

We have now described all of the processes affecting the vowels of Chimwi:ni prefixes except one fairly minor, but rather interesting, rule involving the fronting of the vowel u to i. Recall that the infinitive prefix is ku- when this prefix appears before verb stems beginning with voiced sounds -- cf. ku-lim-a 'to cultivate', ku-yel-a 'to be full', ku-vun-a 'to harvest', ku-mo:l-a 'to shave', ku-gaf-a 'to make a mistake'. The ku- is in no way sensitive to the phonetic make-up of these verb stems -- i.e. the ku- remains unaltered regardless of which voiced consonant occurs at the beginning of the stem and regardless of the nature of the vowel that follows that voiced consonant.

ku- does, however, undergo morphophonemic variation in the examples in (40).

(40)   na-ku-m-bon-a   'he sees me'
         na-ku-m-won-a   'he sees him'
         na-ki-chi-won-a 'he sees us'
         na-ki-n-won-a   'he sees you pl.'
         ka-ku-wa-won-a   'he sees them'

         na-ku-'u-won-a   'he sees it (class 3)'
         na-ki-ya-won-a   'he sees them (class 4)'
         na-ki-'i-won-a   'he sees it (class 5)'
         na-ki-ya-won-a   'he sees them (class 6)'
         na-ki-chi-won-a 'he sees it (class 7)'
         na-ki-zi-won-a   'he sees them (class 8)'
         na-ki-'i-won-a   'he sees it (class 9)'
         na-ki-zi-won-a   'he sees them (class 10)'
         na-ki-l-won-a   'he sees it (class 11)'

From these data it can be observed that ku- shifts to ki- when it precedes an object prefix. Not all object prefixes trigger the Vowel Fronting process. The object prefixes that trigger the change either begin with a palatal consonant or contain the palatal vowel i (or both). The palatal vowel may, of course, be deleted by Vowel Drop -- thus na-ki-l-won-a, where -li- surfaces as l. Prefixes not containing a palatal element do not trigger Vowel Fronting: -mu-,-wa-,

and -u- fall into this category. The only major complication is the
behavior of the 1 sg. prefix-ni- as compared with the 2 pl. prefix -ni-.
Both contain a palatal vowel underlyingly. The 2 pl. prefix triggers
Vowel Fronting as expected, whereas the 1 sg. does not trigger the
process. This difference in behavior is just one of several instances
where the 1 sg. and the 2 pl. prefixes diverge in their behavior despite
the fact that (apparently) they have the same underlying phonological
shape.

One other prefix behaves like ku-; namely, the habitual prefix hu-.
For instance, hu-m-p^h it-a 'he passes me', hu-m-pit-a 'he passes him',
but hi-sh-pit-a 'he passes us', hi-n-pit-a 'he passes you pl.', etc.
ku- and hu- are the only prefixes of the shape Cu- that can occur before
an object prefix, thus Vowel Fronting could be formulated as in (41).

(41)   Vowel Fronting

$$u \longrightarrow i \quad / +C\underline{\quad} + \quad _{OP}\left[X \begin{bmatrix} +high \\ -back \end{bmatrix} Y \right]_{OP}$$

note: OP refers to 'object prefix'

We have now accounted for all of the changes that the vowels in
Chimwi:ni prefixes undergo, and in so doing we have accounted for the
great bulk of prefixal morphophonemics in this language. The only topic
that we have neglected is the behavior of the nasal consonants in
the 1 sg. subject/object prefix, the 2 pl. subject/object prefix, and
the class 9/10 noun class/agreement prefix. The behavior of the nasals in these
prefixes will be the topic of a future paper.

Footnotes

[1] Previous to our work, the only publications dealing with the analysis of Chimwi:ni (also known as Bravanese) were Whiteley (1965) and Goodman (1967). See the references at the end of the paper for a listing of the papers that we have published on Chimwi:ni. We would like to express our gratitude to the University of Illinois Research Board for the support that they have given to our work over the past three years.

[2] There is a sizeable literature on the multiple application problem and a complete listing of references here would be inappropriate. The reader is referred to Kenstowicz and Kisseberth 1977 for some discussion and references.

[3] We use the digraph <u>ch</u> to stand for č and <u>sh</u> to stand for š. Other aspects of our orthography not directly relevant to the present paper are explained in Kisseberth and Abasheikh 1975.

[4] N- stands for a nasal that is homorganic with a following stop and is <u>n</u>- before the fricatives <u>f</u>, <u>v</u>, <u>s</u>, and <u>z</u>. The pre-vocalic shape of this prefix is also sometimes <u>n-</u>, but there are irregularities.

[5] We will show below that <u>li-</u>, as well as most other prefixes consisting of a sonorant plus a high vowel, drops its vowel in most (but not all) contexts. We have no examples where <u>li-</u>, in its function as a noun class prefix, retains its vowel. There are, however, cases where <u>li-</u> retains its vowel when it functions as an agreement prefix. For example, <u>luti: li-łe</u> 'a long stick'.

[6] Class 9 (singular) nouns that refer to animates ordinarily govern the same pattern of agreement as do Class 1 (human singular) nouns. The class 10 animates, however, ordinarily do not behave any different than other class 10 nouns.

[7] The "infinitive" prefix /ku/ is used in certain finite forms of the verb. In particular, it always occurs when the present tense marker -<u>na</u>- occurs and when the future tense marker -<u>ta</u>-occurs. It also appears in the negative perfect construction. E.g.,—

    wa-na-ku-łim-a 'They are cultivating.'
    wa-<u>ta</u>-ku-łim-a 'They will cultivate.'
    nt^h a-wa-ku-łim-a 'They didn't cultivate.'

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LOCATIVES AS OBJECTS IN TSHILUBA:
A FUNCTION OF TRANSITIVITY

Susan U. Stucky

0. Introduction. Locative phrases have been a subject of
controversy since the beginning of grammatical analysis of Bantu
languages over a hundred years ago. Traditional grammars have
attributed to them functions ranging from that of subject and
direct object to that of adverb. Recently, Trithart (1975) and
Dalgish (1976a, 1976b) have discussed locative noun phrases in
light of the grammatical relations (subject of and direct object
of) these phrases may bear with respect to verbs. Since the
function of such phrases has been open to question, I continue
the investigation of Bantu locatives within that cluster of
theories under the heading of relational grammar first proposed
by Postal and Perlmutter (1974) and later expanded by Keenan
(1976) and others.

This paper discusses the behavior of two types of locative
phrases in Luba, one of the major dialects of Tshiluba, a lan-
guage spoken in south-central Zaire.[1] The two constructions
involved contain a locative morpheme, a noun, and a modifier,
either an adjective or a demonstrative. The modifier may stand
in agreement with either the locative morpheme or the noun it-
self. This phenomenon, henceforth alternative concord, has been
noted in other Bantu languages, for example, Givon (1972) for
ChiBemba and Dalgish (personal communication) for OluTsoosto.
However, an explanation of alternative concord, has not, to my
knowledge, been forthcoming in any grammatical tradition.

In this paper, it is shown that the two locative phrases,
one with locative concord (LC) and the other with noun concord
(NC), do indeed behave differently. The locative element in the
LC phrase, it is suggested, functions as the head of that phrase.
In NC phrases, on the other hand, it is the noun and not the
locative which functions as the head. This difference is then
reflected in the pattern of alternative concord. In certain
positions these LC and NC phrases evince a syntactic as well as

semantic contrast which is not present otherwise. This contrast
is shown to be related to two factors. The first is the verb.
If the verb in question requires a surface direct object to be
acceptable, the LC phrase is the direct object. Such verbs are,
in this paper, referred to as strongly transitive verbs. If the
verb does not require a surface direct object, the LC phrase has
two possible functions: direct object or locative. Such verbs
are referred to as weakly transitive. The choice of interpreta-
tion as a direct object or as a locative seems to be dependent
on the context. This contextual information constitutes the
second factor relevant to the contrast. The verbs traditionally
known as intransitive do not take direct objects and it is shown
that the LC phrase takes the locative reading. That this con-
trast between LC and NC phrases is not only semantic but also
syntactic is shown by further evidence on object pronominaliza-
tion and passivization.

Although the implications of such an analysis for a theory
of relational grammar cannot be stated conclusively without
further investigation of other objects in Tshiluba, it is clear
that even the category locative is not discrete, containing
within it at least two types of locatives, LC and NC phrases.

1. Background. Certain background information about Tshiluba
grammatical structure will be useful in following the discussion.
There is, in Tshiluba, a system of noun classes overtly marked
on the noun by a prefix. In linguistic literature, these pre-
fixes are traditionally referred to by numbers corresponding to
the order in which the Proto - Bantu prefixes are given. The
system will be followed in this paper. The class of the noun is
determined by the prefix together with the agreement governed
by the noun. A noun stem may appear with different prefixes.
In each case, the meaning of the stem may be modified in some
way.[2]

The noun class prefixes govern concord of two types,
primary, that taken by most adjectives and participles, and

secondary, that taken by cardinal numbers, possessives, demonstratives, verbs in the third person, the a-link, and the interrogative -epi 'where'. Both types are obligatory. Primary concord is, in Tshiluba; always a copy of the noun prefix appearing on the adjective or participle. Secondary concord is morphologically distinct since it is not always a copy of the noun prefix. The following example illustrates both types:

1.　mu-kanda <u>mu</u>-nene <u>u</u>-di pa mesa[3]
　　　cl.3-book Ag-big Ag-be on table
　　　　　　primary secondary

'a/the big book is on a/the table'

As noted above, the subject governs concord on the verb obligatorily. In contrast, agreement with the direct object is not obligatory. In fact, the object agreement markers appear only when the object is deleted and in some instances of movement rules such as left and right dislocation where the object and the agreement marker are both present. The rules for object pronominalization will be discussed at a later point in this paper.

2.　Locatives. The locative morphemes in Tshiluba are, <u>pa</u> 'on any surface'. <u>ku</u> 'at', and <u>mu</u> 'in'.[4] These morphemes may be used in reference to both time and location. This paper is concerned only with the locative sense. Various analysts at various times have attributed to these locative morphemes aspects of deixis and motion to or from (see Ružička 1959 for an overview of early analyses). In Tshiluba, at least, the relationship of speaker to hearer is handled by demonstratives, of which there are three: 'here', 'there' and 'there near the hearer'; while the notion of direction (motion to or from) is included in the verb. Thus, there are separate verbs for the concepts 'come in', 'come from', and 'go out', etc. There is no real reason to consider the locative morphemes to bear notions of deixis and motion to or from the speaker in Tshiluba.

Unlike the other noun class prefixes, the locative morphemes may appear before full nouns, that is, a noun with another prefix.[5] Here are some examples:

    2. a. pa n-zubu 'on (the) house'
            on cl.9-house
        b. ku tshi-salu 'at (the) market'
            at cl.7-market
        c. mu bu-atu 'in (the) boat'
            in cl.4-boat

Whether the locative morphemes have, in this second instance, been considered as bound or free morphemes in the Bantu languages has depended on the point of view of the analyst. When those who devised an orthography for a Bantu language viewed the locative morpheme as an additional prefix, they combined it with the noun into a single word. In Tshiluba, no phonological evidence (such as vowel or tone coalescence) for considering the locative morphemes to be pre-prefixes as opposed to separate particles is present since no noun in Tshiluba begins with a vowel. There is some syntactic evidence for considering them to be a single unit, however. Under certain conditions, the demonstrative which normally follows a noun may precede the noun. However, the demonstrative may not come between a locative and a noun. Thus, in the following example, the only acceptable position for the demonstrative is following the noun.

    3. a. pa mesa aa
            on table this
            'on this table'
        b. *pa aa mesa
            on this table
            'on this table'

In other Bantu languages there are pre-prefixes, for example, diminutives and augmentatives in KiKongo and noun pre-prefixes

in Dzamba, LuGanda and ChiBemba. In Tshiluba, however, diminu-
tives and augmentatives appear directly affixed to the stem and
no noun pre-prefixes are present. Thus, the locatives are the
only instance where two noun class prefixes are affixed to a
noun stem. In the absence of clear proof that the locative plus
noun sequences should be treated as single words, I will conform
to the traditional orthography and write them as two separate
words. Locative morphemes in combination with noun stems
resemble other nouns morphologically in Tshiluba while a loca-
tive morpheme together with a full noun does not.

When the locative morpheme and another noun class prefix
are present, both morphemes are available for agreement. This
situation gives rise to the phenomenon of alternative concord
since there are two sources for the agreement: the locative
morpheme itself and the noun prefix.

2.1. Locative phrases and grammatical relations. This paper
presents constructions with a locative morpheme followed by a
noun and a modifier which may agree with the locatives pa, ku
or mu (LC) or with the noun class prefix (NC). The following
examples illustrate both types, LC phrases in 4a, 5a, and 6a,
and NC phrases in 4b, 5b, and 6b.[6]

    4. a. pa mesa a-pa
            on cl.6-table this-LC
            'on this table'

        b. pa mesa a-a
            on cl.6-table this-NC
            'on this table'

    5. a. ku n-zubu e-ku
            at cl.9-house this-LC
            'at this house'

        b. ku n-zubu e-wu
            at cl.9-house this-NC
            'at this house'

6. a. mu di-kopu e-mu
        in cl.5-cup this-LC
        'in this cup'
    b. mu di-kopu e-di
        in cl.5-cup this-NC
        'in this cup'

     As indicated in the introduction, these phrases have some-
what different functions in a sentence depending on the degree
of transitivity of the verb, that is, whether the verb is
strongly transitive, weakly transitive or intransitive. Within
a theory of relational grammar, the questions raised are as
follows: Do these phrases bear any relation to the verb? If
so, are they the same? If not, how do they differ? The gram-
matical relations that an NP bears to a verb in Postal and
Permutter's 1974 version are subject of, direct object of and
indirect object of. These NP's are called terms. NP's that do
not bear one of these three relations to the verb are non-terms.
Typical examples are instrumental and locative prepositional
phrases. It has been claimed by Dalgish (1976b) and Trithart
(1975) that locative phrases may be promoted from their original
status as non-terms to termhood. However, they did not consider
the possibility of alternative concord. The data in this paper
show that LC phrases may be understood as having more qualities
of objecthood (both syntactic and semantic) when the verb is
strongly transitive but that the NC phrases do not possess such
qualities.

     The discussion begins with the question whether or not LC
and NC phrases are terms.

2.1.1. Locatives in subject position. One of the tenets of
relational grammar as put forward by Postal and Perlmutter
(1974) is that only terms can trigger verbal agreement. In the
examples below, the locative phrases in subject position govern
verbal agreement. This fact may constitute an argument in favor

of termhood. However, there are at least two other explanations for this pattern of agreement. First, it may be that agreement in Tshiluba is not with a term but with a noun that is not neces- sarily a subject. Secondly, it could be the case that the simple noun is the term but the agreement form is with the larger phrase the noun is a part of. The examples below illustrate the agree- ment pattern. Note that alternative concord does not extend to the predicate; the verb and a predicate adjective always take locative agreement.

7. a. pa mesa a-pa pa-di pa-bole
on cl.6-table this-LC Ag-be Ag-wet
'the surface on this table is wet'

   b. pa mesa a-a pa-di pa-bole
on cl.6-table this-NC Ag-wet
'on this table (and not that one) is wet'

8. a. ku ditu e-ku ku-di ku-pole
at cl.5-forest this-LC Ag-be Ag-peaceful
'the area at this forest is peaceful'

   b. ku di-tu e-di ku-di ku-pole
at cl.5-forest this-NC Ag-be Ag-peaceful
'at this forest (and not some other one) is peaceful'

9. a. mu dikopu e-mu mu-di mu-tooke
in cl.5-cup this-LC Ag-be Ag-clean

   b. mu di-kopu e-di mu-di mu-tooke
in cl.5-cup this-NC Ag-be Ag-clean
'the space inside this cup is clean'

In the examples above, where something is predicated of the LC and NC phrases, no real semantic difference is apparent. However, LC phrases in subject position do not actually refer to the location, i.e. 'the table', 'the cup', or 'the forest' in subject position. Instead, the LC phrases are more correctly glossed as 'the surface on', 'the space in' and 'the area at'.

These representations are not to be confused with 'the top of',
'the inside of', and 'the place at', for which Tshiluba has
separate nouns. The following examples illustrate that the NC
phrase and not the LC phrase is the one appropriate for express-
ing actual location.

10. a. *pa mesa a-pa pa-di mi-kanda
       on cl.6-table this-LC Ag-be cl.4-books
       *'the surface on this table is books'

    b. pa mesa a-a pa-di mi-kanda
       on cl.6-table this-NC Ag-be cl.4-books
       'on this table (and not that one) are books'

11. a. *ku ditu e-ku ku-di n-kashaama
       at cl.5-forest this-LC Ag-be cl.9-leopard
       *'the area at this forest is a leopard'

    b. ku ditu e-di ku-di n-kashaama
       at cl.5-forest this-NC Ag-be cl.9-leopard
       'at this forest is a leopard'

12. a. *mu di-kopu e-mu mu-di n-jiji
       in cl.5-cup this-LC Ag-be cl.10-flies
       *'the space inside this cup is clean'

    b. mu di-kopu e-di mu-di n-jiji
       in cl.5-cup this-NC Ag-be cl.10-flies
       'in this cup are flies'

If it is a fact that only terms can trigger agreement then these
LC and NC phrases may be subjects. Next, consider the rule of
reflexivization.

2.1.2. Reflexivization. Another test for termhood is the pro-
cess of reflexivization. According to Postal and Perlmutter
(1974) only terms can be antecedents for reflexivization. If
the locatives are subjects, they should trigger reflexivization.
In (13a) below an LC phrase triggers reflexivization and in
(13b) an NC phrase does so. (The reflexive morpheme -di is

invariable).

> 13. a. mu tshi-bunda e-mu mu-di-shimbula
>   in cl.7-garden this-LC Ag-Refl-collapse
>   'the space inside of the garden fell in on
>   itself'
>   b. mu tshi-bunda e-tshi mu-di-shimbula
>   in cl.7-garden this-NC Ag-Refl-collapse'
>   'in this garden (and not in another garden)
>   fell in on itself'

These examples indicate that both LC and NC phrases may trigger reflexivization. If it is true that only terms can be antecedents for reflexivization and if it is also true that only terms can govern agreement, then there is some reason to believe that they are in fact terms, subjects, in the sentences above. The question that arises at this point is how they got there, whether by an advancement rule (one which moves an NP up the hierarchy) or by a movement rule (one which does not change grammatical relations) or by being there underlyingly. The data examined in this paper with respect to this question suggest that locative phrases get into subject position via an inversion rule of a sort. To see this, consider cases involving passivization.

2.1.3. How locative phrases get into subject position. The Advancee Tenure Law (Postal and Perlmutter 1974) provides some indication of the status of locative subjects. This law states that a derived term produced by an advancement cannot be demoted, that is, it cannot go down the hierarchy or become a chômeur (and cease to bear any relations to the verb). Sentences (14a-d) below illustrate that neither LC nor NC locative subjects can be demoted by a rule of passive. A rule of passive in relational grammar promotes a direct object into subject position and demotes the subject to a position of chômeur (see Sheintuch 1976

for additional motivation of the position of chômeur). The following examples show that locative phrases in subject position cannot be demoted by a rule of passive.

14. a. mu bu-loba mu-fuke mu-di mu-mena tshi-ombe
in cl.4-ground LC-cultivated Ag-be Ag-grow
cl.7-manioc
'in the cultivated ground (and not on it) is
growing manioc'

b. *tshi-ombe tshi-di tshi-menibue ku-di mu bu-loba
mu-fuke
cl.7-manioc Ag-be Ag-be grown by in cl.14-ground
LC-cultivated
*'manioc is being grown by the space in the
cultivated ground   *in the ground'

c. mu bu-loba bu-fuke mu-di mu-mena tshi-ombe
in cl.14-ground NC-cultivated ag-be ag-grow
cl.7-manioc
'in the cultivated ground (and not the uncul-
tivated ground is growing manioc')

d. *tshi-ombe tshi-di tshi-menibue kudi mu bu-loba
bu-fuke
cl.7-manioc ag-be ag-be grown by in
cl.14-ground NC-cultivated
*'manioc is being grown by in the cultivated
ground

One could argue on the basis of these examples that the subject locatives must have been promoted and that is why they cannot be further demoted. It is equally plausible to argue, however, that the LC and NC phrases cannot be demoted because of semantic restrictions. That is, neither phrase is interpretable as an agent.

However, there is clearer evidence that LC and NC phrases before intransitive verbs are the result of an advancement rule

or a simple non-relation changing movement rule. Evidence
for this comes from examination of sentences with verbs normally
considered to be intransitive.

> 15. a. mu tshisalu e-mu mu-enda bakaji
>   in cl.7-market this-LC Ag-walked cl.2-women
>   'inside this market walked the women (and not
>   around it)'
>   b. mù tshi-salu e-tshi mu-enda ba-kaji
>   in cl.7-market this-NC Ag-walked cl.2-women
>   'in(to) the market walked the women'

Since grammatical relations are not marked on the noun in
Tshiluba, the status of <u>bakaji</u> 'women' is not clear. On the
surface the result is a construction analogous to that of a
SVO sentence. <u>Bakaji</u> 'women' cannot become pronominalized into
either of the two positions available for object pronouns: pre-
fix or suffix on the verb root.[7]

>   e-tshi
> 16. a. *mu tshi-salu e-mu mu-<u>ba</u>-enda
>   in cl.7-market this-LC Ag-them-walked
>   *'inside this market walked them'
>   e-tshi
>   b. *mu tshi-salu e-mu mu-enda-<u>bo</u>
>   in cl.7-market this-LC Ag-walked-them'
>   *'in(to) this market walked them'

Since 'women' does not obviously bear any grammatical relations
to the verb (it does not control verb agreement or pronominali-
zation) it could be viewed as a kind of chômeur after having
been demoted by an advancement rule, except that it ought to be
preceded by a preposition as are most non-terms in Tshiluba. It
is possible instead to view such processes as mere movement
rules, some kind of inversion perhaps, whereby the subject is
moved around the verb and the locative appears in initial
position. Verb agreement then, would be a rather superficial

rule, not intimately connected with relations. Such an inver-
sion rule does not make any changes in the grammatical relations
borne by the original subject nor of the locative phrase (what-
ever that might have been). A look at the roles played by
locative phrases following the verb lends credence to this
hypothesis.

2.1.4. Locative phrases following the verb. In the previous
section it was shown that both LC phrases and NC phrases can
appear sentence initially and that they exhibit a contrast in
meaning in that position. It was suggested that this pattern
was the result of an inversion rule rather than a result of a
deep structure locative subject for intransitive verbs. This
section outlines the constructions in which LC and NC phrases
participate in complement position. The sentences below
illustrate that LC phrases and direct objects are sometimes
mutually exclusive.

17. a. *mu-kaji u-di u-teka mi-kanda mu tshi-longelu
       mu-nene
       cl.1-woman Ag-be Ag-put cl.4-books in
       cl.7-school LC-big
       *'the woman is putting the books the space
       in the big school'

    b. mu-kaji u-di u-teka mi-kanda mu tshi-longelu
       tshi-nene
       cl.1-woman Ag-be Ag-put cl.4-books in
       cl.7-school NC-big
       'the woman is putting the books in the big
       school'

18. a. mu-kaji u-di u-bala mi-kanda mu tshi-longelu
       mu-nene
       cl.1-woman Ag-be Ag-read cl.4-books in
       cl.7-school LC-big
       'the woman is reading the books in the big
       school'

    b.   mu-kaji u-di u-bala mi-kanda mu tshi-longelu
        tshi-nene
        cl.1-woman Ag-be Ag-read cl.4-books in cl.7
        cl.7-school NC-big
        'the woman is reading the books in the big
        school'

19. a.   mu-kaji u-di w-enda mu tshi-longelu mu-nene
        cl.1-woman Ag-be Ag-go in cl.7-school LC-big
        'the woman is walking into the big school'

    b.   mu-kaji u-di w-enda mu tshi-longelu tshi-nene
        cl.1-woman Ag-be Ag-go in cl.7-school NC-big
        'the woman is walking into the big school'

Examples like (17a-b) show that LC, but not NC phrases, may render sentences with an object unacceptable. However, in the same type of construction LC and NC phrases in (18a-b) are both acceptable. Again, in (19a) and (19b) both LC and NC phrases may follow the verb. One distinction between sentences (17a) and (17b) and the sentences in (18) and (19) is the type of verb. A verb like -teka 'put' in (17) requires that a surface structure object be present in the sentence for it to be acceptable. Verbs like -bala 'read' and -enda 'walk', on the other hand, may surface without such objects.

    If it is the requirement of an object by the verb (its transitivity) that is the crucial difference, then there is an explanation for the apparent contradictions in the data. Suppose that verbs which require surface structure objects, henceforth strongly transitive verbs, force on the LC phrase an object reading (in this case 'the space in'). Since there is already an object, and since the verb permits only one object, the LC phrase is one object too many and the sentence surfaces as unacceptable. In sentences (18) and (19), on the other hand, no object is required, and the LC phrase surfaces as a locative, with a reading corresponding to that of the NC phrase.[8] Note that this analysis makes the claim that the requirement of an

object by a verb, in other words its transitivity, be extended
beyond the first NP to the second. Although there is little
precedent for the extension of transitivity beyond the verb's
object, this analysis makes several predictions.[9] First, if the
LC phrase really is the object of strongly transitive verbs,
then it, and not the NC phrase, should be acceptable when no
other object is present. In the following sentence, the LC
phrase is interpreted as a direct object.

> 20. a. mu-kaji u-nanga ku nzubu e-ku
>   cl.1-woman Ag-like at cl.9-house this-LC
>   'the woman likes the space at this house --
>   its atmosphere'

As predicted, the NC phrase in (20b) is distinctly less
acceptable in this position.

> b. *mu-kaji u-nanga ku nzubu e-mu
>   cl.1-woman Ag-like at cl.9-house this-NC
>   *'the woman likes at the house'

The still unconvinced might argue that the LC phrase in (18a)
might not be interpreted as an object simply because it does
not make any sense, that is, reading the space in the room is
not plausible in the real world. Note, however that this
appeal to pragmatics does not explain why the LC phrase in (17a)
cannot be interpreted semantically as a locative parallel to
the NC phrase in (17b) since the LC phrase should be acceptable
in (17a) if it is only meaning that governs the difference.

This analysis makes a second prediction about the object-
hood of LC phrases in sentences like (18a) and (18b). If the
crucial factor is the requirement of an object then what about
the difference between verbs in sentences like (18) and (19)?
Verbs in sentences like (18) would permit an object and an LC
or NC phrase while verbs like those in (19) do not normally

permit objects (although they do permit LC and NC phrases). The
verbs of (19) are traditionally known as intransitive verbs.
Those in (18) fall into the traditional classification of trans-
itive verbs. But it has been suggested that the verbs like that
in (17) (which are also transitive) and the verbs in (18) differ
in the degree to which they require surface structure objects.
Since those which require surface structure objects were referred
to as strongly transitive verbs, the verbs not requiring but
permitting objects are labeled weakly transitive verbs. (Other
verbs falling into this category are -dia 'eat', -loba 'fish'
and -songa 'carve!) Since a weakly transitive verb permits an
object but does not require it, a weakly transitive verb should
allow two readings, one an object reading and the other a loca-
tive reading parallel to that of the NC phrase, when the LC
phrase is only an object. Sentence (21a) below has these two
readings. More importantly, it has these two readings regard-
less of whether the modifier is present. However, where the NC
phrase is substituted into (21a) as in (21b), there is only one
reading: the location 'in the boat'.

    21. a. mu-ntu u-di u-songa mu bu-atu mu-nene
            cl.1-man Ag-be Ag-carve cl.14-boat LC-big
            'the man is carving out the inside of the
            boat--making the boat bigger or alternatively
            'the man is carving in the boat'
      b. mu-ntu u-di u-songa mu bu-atu bu-nene
            cl.1-man Ag-be Ag-carve in cl.14-boat NC-big
            'the man is carving in the big boat'

Thus, (21) indicates that there are pragmatic (contextual)
factors involved in the interpretation of the LC phrases when
they are preceded by weakly transitive verbs.
    Now if intransitive verbs do not generally permit objects
at all, this analysis would predict that the LC phrase is not
the object of an intransitive verb simply because the intransi-

tive verb does not admit objects. This would allow the locative
interpretation to surface. It has already been shown that
intransitive verbs do surface with both LC and NC phrases in
example (19). According to the informants there is a slight
contrast in meaning, corresponding to a notion of focus. How-
ever, the LC phrase does not seem to translate as 'the space in'.
Example (19) is repeated here with the corresponding contrast
noted in the glosses.

19. a. mu-kaji u-di w-enda mu tshi-longelu mu-nene
        cl.1-woman Ag-be Ag-in cl.7-school LC-big
        'the woman is walking into the big school (and
        not outside it)
    b. mu-kaji u-di w-enda mu tshi-longelu tshi-nene
        cl.1-woman Ag-be Ag-walk cl.7-school NC-big
        'the woman is walking into the big school (and
        not the small one)

To check this intuition, one can invert the sentence. If both
are acceptable as inversions, it would seem reasonable to con-
clude that indeed, the LC phrase has not become the object since,
in sentence initial position, the object reading would not pro-
duce an acceptable sentence. Compare (19) above with (22) below.

22. a. mu tshi-longelu mu-nene u-di w-enda mu-kaji
        in cl.7-school LC-big Ag-be Ag-walk cl.2-woman
        'in(to) the school is walking the woman'
    b. mu tshi-longelu tshi-nene u-di w-enda mu-kaji
        in cl.7-school NC-big Ag-be Ag-walk cl.2-woman
        'in(to) the big school is walking the woman'

Since the reading of the LC phrase in (22a) is not 'the space
in the big school' but rather 'in(to) the big school' it may be
concluded that the LC phrase was not an object of the intransi-
tive verb and that the prediction was indeed borne out. Since

intransitive verbs of motion do not permit objects, the LC
phrase is not an object.

2.1.5. Locative phrases and pronominalization. Examples in
this section show that both LC and NC phrases may be pronominal-
ized and that the position of the pronoun in the sentence depends
on the role of the antecedent phrase. This adds credence to the
analysis proposed in the preceding section by showing that other
processes in the language reflect the distinctions outlined in
that section. Recall from section (1) that pronouns appear only
when the antecedent is deleted and in some instances of non-rela-
tion changing movement rules. Thus, in all the examples of
pronominalization, but not in the examples of movement rules,
the antecedent does not appear. Since the pronouns for both
NC and LC phrases are identical, the reader may ask how it is
possible to tell what is being pronominalized, an LC or an NC
phrase (or even if the NC phrase is actually being pronominal-
ized at all since it could be a process analogous to verb agree-
ment whereby the locative always controls agreement). First,
pronominalizations were elicited in pairs with the antecedent
present in the first and the pronoun in the second. Then, the
meaning was carefully checked to make sure that the pronominal-
ized sentence had the same interpretation as the first. Second-
ly, there is a difference in the place of the pronouns indicating
that the NC phrase and the LC phrases are distinguished in the
process and thus the NC phrase is indeed being pronominalized
differently from the LC phrase.

There are two positions available for pronouns (excluding
the subject agreement markers): immediately preceding the verb
root and following the verb root. As mentioned above, the
choice of position will be shown to correlate with the function
(object or locative) of the antecedent phrase.

Example (23) below corresponds to example (21). In that
example, the LC phrase was deemed ambiguous. That is, the
sentence could read 'the man carved out the space in the big

boat' or 'the man carved in the big boat'. The first gloss
corresponds to the object reading while the second corresponds
to the locative reading. Pronominalization of the first results
in the appearance of the object pronoun in prefix position.
Pronominalization of the second results in the appearance of a
suffix pronoun. Compare (23a) and (23b) below.

23.   a.   mu-ntu u-di u-mu-songa
           cl.1-man Ag-be Ag-OP-carve
           'the man is carving out the space in it'
      b.   mu-ntu u-di u-songa-mu
           cl.1-man Ag-be Ag-carve-OP
           'the man is carving in it'

Pronominalization of an NC phrase results in a suffix pronoun
as well, reflecting the merger of syntactic and semantic LC
and NC roles. It is identical to (23b) above.

Recall from examples (18a-b) that the LC and NC phrases
both had a locative reading. When those are pronominalized,
both pronouns appear in suffix position. The LC phrase pronoun
is rejected in prefix position as is the NC pronoun.

24.   mu-kaji u-di u-bala-mu
                  *u-mu-bala
      cl.1-woman Ag-be Ag-read-P
                  *Ag-OP-read
      'the woman is reading in it'

If the position for the object pronoun (for the LC phrase)
is the prefix position, then one would expect the pronoun for
the LC phrase in the examples in (20) to show up in prefix
position since the only semantic interpretation assigned to an
LC phrase following a strongly transitive verb is that of
object. As the following example indicates, it does.

25. mu-kaji u-ku-nanga
    cl.1-woman Ag-OP-like
              *u-nanga-ku
              Ag-like-OP
    'the woman likes it there'

Furthermore, an NC phrase following the object of a strongly transitive verb is always pronominalized into suffix position regardless whether the object is pronominalized or not. Thus the position of the pronoun is controlled not by the availability of the object slot but by the function of the NC phrase. It is not the object and it does not appear in prefix position as the following example shows.

26. mu-kaji u-di u-teka-mu mi-kanda
    cl.1-woman Ag-be-Ag-put-P cl.4-books
              *u-mu-teka mi-kanda
              Ag-P-put cl.4-books
    'the woman put the books in there'

Thus, the NC phrase is always pronominalized into suffix position regardless of whether the verb is strongly or weakly transitive. The LC phrase, on the other hand, is pronominalized into prefix position in just the cases where its antecedent was analyzed as being the object of the verb. Otherwise it is pronominalized into suffix position just like the NC phrase.

This leaves the case of those intransitive verbs of motion. One might expect that since neither the LC nor the NC phrase can become an object that they would always appear as suffixes. However, this is not the case. Both LC and NC phrases are prefixed and suffixed. This is not necessarily proof that the LC and NC phrases have become objects. Since the verb does not cause the NPs to become interpreted as objects, the locatives instead retain their locative status and even if their pronouns appear in prefix position there is no danger that they will be interpreted as objects. This point needs further research but

preliminary investigation suggests that the difference in posi-
tion is contextual depending on the knowledge of the speaker
and hearer. Thus, (19a) and (19b) can be pronominalized as
either (27a) or (27b) below.

> 27. a. mu-kaji u-di u-mu-enda
>   cl.1-woman Ag-be Ag-P-walk
>   'the woman is walking in(to) there'
>   b. mu-kaji u-di w-enda-mu
>   cl.1-woman Ag-be Ag-walk-P
>   'the woman is walking in(to) there'

Thus, pronominalization processes add credence to the
analysis proposed in the preceding sections by showing the
dependence of at least one syntactic process on the distinction
between LC and NC phrases.

2.1.6. LC and NC phrases and non-relation changing movement
rules. Examples in this section show further syntactic differ-
ences between LC and NC phrases with respect to non-relation
changing movement rules. From the examples in this paper (in
particular examples 7-12) one could conclude that it is the
locative morpheme which acts as the head of an LC phrase and
that it is the noun and not the locative morpheme which acts
as the head of a NC phrase. This would explain the alternative
agreement. In light of this explanation, the behavior of these
phrases with respect to agreement is not surprising.
As the following discussion illustrates, the LC phrases operate
as a unit for non-relation changing movement rules, i.e. Left
and Right Dislocation and for Relativization, while the NC
phrases may be broken up.

2.1.6.1. Left-Dislocation. Either a LC phrase or a NC phrase
may be moved to the left of the subject leaving behind a pronoun
on the verb.

28. a. mu tshisalu e-mu mu-kaji u-di w-enda-mu
in cl.7-market this- LC cl.1-woman Ag-be
                         e-tshi
 Ag-walk- B this- NC
'in/side this market, the woman is walking
(in) there'

Alternatively, the noun phrase <u>tshisalu</u> <u>etshi</u> 'This market' may be moved by itself, and the locative pronoun is suffixed onto the verb. <u>Tshisalu</u> <u>emu</u> 'this market' cannot be moved out.

28. b. *tshi-salu e-mu,   mu-kaji u-di w-enda-mu
cl.7-market this-LC cl.7-woman Ag-be Ag-walk-LP
 tshi-salu e-tshi
cl.7-market this NC
'this market, the woman is walking in'

2.1.6.2. Right-Dislocation. Both LC and NC phrases may be right-dislocated by leaving a pronoun behind. This construction corresponds to a notion of afterthought referred to by Byarushengo (1976). These are the only circumstances in Tshiluba under which a locative phrase and a pronoun both appear following the verb. Such a construction requires a comma intonation. Both a LC phrase and a NC phrase can be right-dislocated as in (29).

29. a. mu-kaji u-di w-enda-mu, mu tshi-salu e-mu
cl.1-woman Ag-be Ag-walk-LP, in cl.7-market this-LC
                         mu tshi-salu e-tshi
                         in cl.7-market this-NC
'the woman is walking in, inside/in this market'

Like the examples from Left-Dislocation in the preceding section, the phrase <u>tshisalu</u> <u>etshi</u> 'this market' may be dislocated while <u>tshisalu</u> <u>emu</u> 'this market' may not.

29. b.   mu-ḳaji u-di w-eṇḍamu, *tshi-salu e-mu
          cl.1-woman Ag-be Ag-walk-LP*cl.7-market this-LC
                               tshi-salu e-tshi
                               cl.7-market this-NC

     'the woman is walking in, this market'

2.1.6.3. Topicalization. Topicalization, unlike Left and
Right Dislocation, does not require a pronoun left behind. In
this case, both NC and LC phrases can be moved to the left.

30. mu tshi-salu e-mu, mu-ḳaji u-di w-enda
     in cl.7-market this-LC cl.1-woman Ag-be Ag-walk
     mu tshi-salu e-tshi
     in cl.7-market this-NC
     'inside/in this market, the woman is walking'

The examples from the movement rules of Dislocation clearly show
the separability of an NC phrase. Relativization also points
in the same direction.

2.1.6.4. Relativization. It is within the realm of relativi-
zation that the theory of relational grammar has made one of
its most interesting claims. Keenan and Comrie (1976) proposed
an Accessibility Hierarchy which states that NP's on the upper
end of the AH are universally easier to relativize than those
on the lower end. The implicational relations of the hierarchy
claim that if a language can relativize indirect objects, for
example, it can also relativize a direct object, but not neces-
sarily vice-versa. A revised version (Keenan 1976:305) of
the AH appears below.

          Subject > Dir. Obj. > Ind. Obj. > Oblique > Gen > Obj.of Comp.

     For some Bantu languages it has been claimed that indirect
objects do not get relativized first without becoming direct
objects. By Dative Movement, the I.O. is promoted into D.O.

position first. A similar argument can be maintained for
Tshiluba but not without reservations. If I.O.'s in Tshiluba
are not relativized directly but must first be promoted to
direct object position, it would be unexpected according to the
predictions of the hierarchy for anything lower on the hierarchy
to be relativized without first becoming a direct object. But
locatives have also been shown to be relativizable, and while
Trithart (1975) and Dalgish (1976a) tried to motivate a locative
to direct object promotion rule essential to locative relativi-
zation, neither was particularly successful. As discussed in
section 2.1.4., LC phrases may become direct objects of strongly
transitive verbs.

What is needed to show that locatives are not promoted to
direct object before being relativized is relativization in a
sentence that already has another direct object and where the
reading of both the LC phrase and the NC phrase are, according
to the analysis above, not direct objects. The following example
shows that both the locative phrases may be relativized and that
indeed they are not promoted:

> 31. mu tshi-longelu e-mu   mu-di-bo ba-bala mi-nkanda...
>   in cl.7-school this-LC Rel-be-they they-read cl.4-books
>   e-tshi
>   this-NC
>   'inside/in this school in which they are reading
>   books...'

As in the cases of Dislocation, the LC phrase must remain
a unit, but the NC phrase may be relativized out of.

> 32. *mu tshi-longelu e-mu   tshi-di-bo ba-tokesha
>   in cl.7-school   this-LC Rel-be-they they-clean
>   e-tshi
>   this-NC
>   'in this school which they are cleaning'

Until the status of indirect object relativization is solved, (31) does not pose too many problems for the theory of the AH since it could be claimed that indirect objects are not promoted (or do not exist) and that the relativization in Tshiluba simply reaches down lower in the AH.

2.1.7. Passive. In contrast to the preceding rules, consider the relation changing rule of passive. Since there is a difference in function between LC and NC phrases, one might well question their relative abilities to passivize. If the NC phrase passivizes, then it would be expected that the LC phrase would also, since when it is an object it is higher on the hierarchy. In fact, both phrases may passivize.

On a strongly transitive verb the NC phrase passivizes in two fashions analogous to the movement rules and Relativization. (Recall that an LC phrase is not permitted together with the other object.) First the entire NC phrase without a locative pronoun suffix may passivize.

> 33. a. mu tshi-salu e-tshi mu-tuad-ibue nzolo kudi
>   mukaji
>   in cl.7-market this-NC Ag-carry-Pass chicken
>   by the woman
>
>   'in the market was carried a chicken by the woman'

Secondly, the 'market' may passivize separately, leaving behind a mu'LP' on the verb.

> b. tshi-salu e-tshi tshi-tuadi-bue-mu nzolo kudi
>   mukaji
>   cl.7-market this-NC Ag-carry-Pass-LP chicken
>   by woman
>   'this market was carried in a chicken by the
>   woman'

Since it was argued above that in sentences with a strong transitive verb the LC phrase may not appear with another object and since a passive of (33a) with mu tshisalu emu is out, sentences (33a) and (33b) indicate that in Tshiluba, passivization may reach down the hierarchy to the level of a locative.

Both LC and NC phrases will passivize on an intransitive verb of motion as well. However, the LC phrase is more acceptable in a passive than the NC phrase. The analyst is either forced to claim that LC phrases transitivize intransitive verbs of motion or that passivization does indeed go beyond the direct and indirect object positions. Claiming the former would vitiate the argument of this paper that it is the verb which influences the interpretation of the LC phrase and not the presence of the LC phrase itself. However, evidence of inversions with intransitive verbs of motion indicated that the LC phrases did not get the object reading (see examples in 22). This leaves only the influence of the rule of Passive itself together with the proposal that the rule of Passive does extend down to the level of locative. Here is an example:

> 34. pa nzubu apa pa-buuk-ibua kudi nyunyu
> ? on cl.9-house this-LC LA-fly-Pass by bird
> pa nzubu a-a
> on cl.9-house this-NC
> 'the surface on the house was flown onto by the bird'

3. Conclusion. It has been argued that whether or not a locative phrase is interpreted semantically as a direct object is not dependent on the locative phrase itself, nor is it dependent on the phenomenon of alternative concord. Rather, it has been proposed that the degree of transitivity determines how a LC phrase is to be interpreted. Strong transitive verbs seem to have a greater power of attraction and generally rule out the occurrence of an object together with a LC phrase. Intransitive

verbs do not give an object reading to the LC phrase. Weak
transitive verbs allow both LC and NC phrases and when the
context requires, the LC phrase may be the object. Data from
object pronominalization supported this. Furthermore, LC and
NC phrases were shown to behave differently with regard to move-
ment rules and it was suggested that the LC phrase is more
tightly knit than the NC phrase.

For this analysis to hold, it was necessary to claim that
a strongly transitive verb can extend its influence beyond the
first NP to the second NP. Thus, while transitive verbs some-
times require that a surface structure object be present, they
in turn cause certain NPs to be interpreted as objects. Whether
this analysis is a valid one depends, of course, on future
research. One area of investigation is that of verbs requiring
two objects (inherently two object verbs and verbs with exten-
sions such as the applied). If the verbs requiring two objects
also require an LC phrase after the verb to be interpreted as
an object and if these verbs do not allow an LC phrase after
two other objects, this behavior would lend support to the
analysis.

This analysis also claims that if there is no modifier
which illustrates alternative concord, two interpretations can
be assigned to a locative morpheme and an accompanying noun,
subject to the conditions outlined in this paper. This would
explain the source of much of the confusion surrounding Bantu
locatives. And this analysis seems to be in line with a comment
by one of the consultants, Mutombo, who said with reference to
a sentence in which the LC phrase appears to function as a
direct object, "It seems to become the object...but it's
rather fuzzy."

FOOTNOTES

[1]The research for this paper has been supported by an NDFL Title VI fellowship through the University of Illinois African Studies Center. Special thanks go to the two consultants, Benoit Tshiwala and Mutombo Mpanya. They represent two geographical areas (Lubumbashi and Tshikapa, respectively) where Tshiluba is spoken. The group from which Benoit comes left the Tshikapa area starting about a hundred years ago when the copper mines were opened in southern Zaire. So far as I can tell, there are no significant differences in dialect relevant to this paper. I would also like to thank Prof. Eyamba Bokamba, Prof. Charles Kisseberth and Prof. Jerry Morgan for their helpful comments. However, any errors are solely my responsibility.

[2]The term class or gender has also been applied to pairs of prefixes, singular and plural. In this case, a third defining feature of noun class is used. It should be noted, however, that plurals do not exist for some mass or abstract nouns such as mayi 'water' or bulunda 'friendship'. In other cases, a singular prefix may have two or more plural prefixes associated with it and vice-versa, depending on the noun. Thus, this third criterion is less constant than the first two.

[3]Standard orthography has been employed here with one exception. Long vowels that are not derived by rule are written as sequences of two short vowels. Tone is not marked.

[4]A fourth locative morpheme, suffixal -ni found in many eastern Bantu languages is not found in Tshiluba.

[5]Traditionally, the three locatives are considered to have come from the Proto-Bantu noun class prefixes 16 *pa, 17 *ku, and 18 *mu. Like other noun prefixes in the language these morphemes may be prefixed to noun stems. The following list illustrates the stem -ntu prefixed by the locatives as well as other prefixes, demonstrating the separability of noun stems from prefixes and the mobility of the noun stem.

pa-ntu	'the surface on something'
ku-ntu	'the area at someplace'
mu-ntu	'the inside of something'
ba-ntu	'men, people'
tshi-ntu	'thing'
bi-ntu	'things'
bu-ntu	'mankind'

Such nouns do not differ morphologically or syntactically from other nouns in the language and I am not concerned with them here. Also there is a category of locative prefix plus noun stem forms that are not discussed. These seem to be the result of a contraction rule. The inherent noun prefix is lost and resurfaces when there is a modifier present.

[6]The glosses in 4-6 are approximations at this point since it will be shown that the verb may influence the interpretation slightly.

[7]The pronoun for both LC and NC phrases turns out to be the same, thus it is difficult to tell whether an LC or an NC phrase is being pronominalized. Without further evidence, it might be argued that object pronominalization behaves as verbal agreement; that is, only locatives agree with the verb and only the locative governs the pronominalization process. There is, however, some evidence that LC and NC phrases are pronominalized differently. This shows up in the discussion of pronominalization with respect to transitive verbs in section 2.1.5. To distinguish a locative pronominal suffix from a separate morpheme, it is necessary to take into account the tone. Tone on the pronoun is low, while it is high on the separate morpheme.

[8]There does seem to be a difference in regard to focus however. (19a) means 'into the big school and not outside it' while (19b) means something like 'into the big school not the small one'. See the discussion of this example later in this section.

[9]See Hodges (in this volume) for a more refined view of the role of the verb in the semantic interpretation of object in a Bantu language, Ki-Meru.

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