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# Studies in The Linguistic Sciences

## PAPERS IN GENERAL LINGUISTICS

EYAMBA G. BOKAMBA *Language and National Develop in Sub-Saharan Africa (A Progress Report)*..... 1

GEORGIA M. GREEN *Pragmatics and Syntactic Description*..... 27

GEORGIA M. GREEN *Competence for Implicit Text Analysis: Literary Style Discrimination in Five-Year-Olds*..... 39

CHIN-W. KIM *Epenthesis and Elision in Metrical Phonology*..... 57

CHARLES W. KISSEBERTH *Displaced Tones in Digo (Part 2)*..... 73

YEN LING LEE *A Study on Code-Switching in Taiwan*..... 121

JERRY E. MORGAN *Some Observations on Discourse and Sentence Grammar*..... 137

DAVID ODDEN *Evidence for the Elsewhere Condition in Shona*..... 145

MICHIO TSUTSUI *Topic Marker Ellipsis in Japanese*..... 163

CHIN-CHUAN CHENG AND CHARLES W. KISSEBERTH *Ikorovere Makua Tonology (Part 3)*..... 181



# STUDIES IN THE LINGUISTIC SCIENCES

PUBLICATION OF THE DEPARTMENT OF LINGUISTICS  
UNIVERSITY OF ILLINOIS AT URBANA-CHAMPAIGN

EDITORS: Charles W. Kisseberth, Braj B. Kachru, Jerry L. Morgan

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**VOLUME 11, NUMBER 1**  
**SPRING, 1981**

DEPARTMENT OF LINGUISTICS, UNIVERSITY OF ILLINOIS  
URBANA, ILLINOIS 61801





T A B L E   O F   C O N T E N T S

Eyamba G. Bokamba: Language and National Development in Sub-Saharan Africa (A Progress Report). . . . .	1
Georgia M. Green: Pragmatics and Syntactic Description. . . . .	27
Georgia M. Green: Competence for Implicit Text Analysis: Literary Style Discrimination in Five-Year-Olds. . . . .	39
Chin-W. Kim: Epenthesis and Elision in Metrical Phonology . . . . .	57
Charles W. Kisseberth: Displaced Tones in Digo (Part 2) . . . . .	73
Yen Ling Lee: A Study on Code-Switching in Taiwan . . . . .	121
Jerry L. Morgan: Some Observations on Discourse and Sentence Grammar. . . . .	137
David Odden: Evidence for the Elsewhere Condition in Shona. . . . .	145
Michio Tsutsui: Topic Marker Ellipsis in Japanese . . . . .	163
Chin-Chuan Cheng and Charles W. Kisseberth: Ikorovere Makua Tonology (Part 3). . . . .	181



LANGUAGE AND NATIONAL DEVELOPMENT IN SUB-SAHARAN AFRICA:  
A Progress Report\*

Eyamba G. Bokamba

If the 1960s can be considered as the decade of the struggle for political independence, and the 1970s as the decade of the total liberation of Africa and the consolidation of political power, the 1980s will and should certainly be the decade of development in the continent. Certain questions arise, however, regarding the direction and nature of this development. For example, what kind of development does Sub-Saharan Africa need and for whom? In what areas should these developments occur? Who should initiate them and in what manner?

This paper takes up these questions, among others, and discusses them with particular reference to the role of language in personal and national development in Sub-Saharan Africa. The study is subdivided into two major parts. The first part discusses development in general terms, and presents a critical evaluation of African developmental goals against the background of the 1961 UNESCO/UNECA Conference of Ministers of African Education, held in Addis Ababa, Ethiopia, using comparative statistics on literacy and educational attainment in an attempt to assess the current level of general development. The 2nd part proposes a developmental model which takes the university and other institutions of higher learning as the central agents of development. This model calls for a fundamental restructuring of the entire educational system, an increased emphasis on functional literacy for adults, and the reformulation of the current language policies as to concord with the new objectives. The proposed model is argued to be more compatible with and realistic to Sub-Saharan African needs than the current European-based approach.

## 0. INTRODUCTION

The continent of Africa is suffering today from various aspects of underdevelopment, and theories by Western scholars abound as to why this is the case. Some of these scholars attribute African underdevelopment to the capitalist, imperialist, and colonialist exploitation of the continent by Europe and its allies (Rodney 1972), and others attribute it to ethnicity and the lack of trained personnel (Dumont 1963; Balandier 1966). In reading such studies one gets the impression that if colonialism, ethnicity, and related facets were removed African development would become an easy goal to achieve. The fact of the matter is that the situation is much more complex than this: there are many dimensions and unknowns to the issue.

In this paper I shall consider one of these dimensions, viz. the role of language in development. I will attempt to demonstrate here how language is critically involved in personal and societal development. More specifically, I would like to maintain that language, just like education, is central to personal and national development. To demonstrate the validity of this hypothesis, I will describe the manner in which language is involved in educational, political, socio-cultural, and personal developments; and will review in passing the language policies of African states vis-a-vis education in an attempt to ascertain the extent to which they have affected over-all development in Sub-Saharan Africa.

The paper is essentially sub-divided into two major parts. The first part discusses development and the role of language in it, and evaluates critically the current level and direction of development in Sub-Saharan Africa. This evaluation is presented against the background of the goals set out by the conference of ministers of African education held in Addis Ababa in 1961 under the auspices of the UNESCO and the United Nations Economic Commission for Africa (UNECA). Statistical data on educational developments and literacy are considered in making this evaluation. The second part of the paper proposes and defends a developmental model that responds to the objective realities of the region, and would permit real development/progress therein.

Since most of the studies on developmental problems in Africa have been largely presented from an external perspective, i.e., one which attempts to locate the causes of these problems outside of Africa, the present analysis focuses attention on internal causes. We have pursued this perspective not because of methodological reasons, but because we are persuaded that African underdevelopment is NOW an African problem.

Before we embark on the analysis proper, however, a word about the role of language in society is in order. Language, most social scientists will agree, is the most fundamental feature of the human society: it is the quintessential of the homo sapiens. Ronald Langacker, one of the leading American linguists, characterized language as follows back in 1967:

- (1) Language is everywhere. It permeates our thoughts, mediates our relations with others, and even creeps into our dreams. Most human knowledge and culture is stored and transmitted in language, which is so ubiquitous that we take it for granted. Without it, however, society as we know it would be impossible. (Langacker 1967: 3)

Langacker went on to observe:

- (2) Despite its undeniable importance in human affairs, language is poorly understood. Misconceptions about it are legion, even among well-educated people and not even professional linguists can claim to understand it fully.

Langacker's observation made fourteen years ago in the height of the Chomskian linguistic revolution still applies today, despite the fact that the linguistic sciences have achieved phenomenal progress since that time.

Educators, linguists and other social scientists have not yet fully appreciated the nature of language and its role in society. One of these misconceptions involves the role of language in general development. That is, what role does language play in personal and national development? To answer this question, let us first define what development is.

## 1.0 LANGUAGE AND DEVELOPMENT

1.1 Although there is no commonly agreed upon definition of development, most social scientists recognize that development is a multifaceted phenomenon that involves changes in various areas of human life: economic, educational, cultural, and socio-political. Because of the dominant role played by economists in social sciences, the definition of development has often been presented in terms of economic development as measured by indicators such as per capita income, GNP, and industrial outputs. Such a definition, however, is only a partial reflection of general development.

As used in this study, the term development will be understood in the Frankian sense. That is:

- (3) Real development involves a structural transformation of the economy, society, and culture of the satellite (nation) that permits the self-generating and self-perpetuating use and development of the people's potential. Development comes about as a consequence of a people's frontal attack on oppression, exploitation, and poverty that they suffer at the hands of the dominant classes and their system (Gunder Frank, et al. 1972: xvi).

At the individual/personal level, development implies increased skill and capacity in manipulating one's environment, greater freedom and opportunities, creativity, self-discipline, responsibility, and material well-being (Rodney 1972). In other words, it involves the mental faculty as well as physical factors.

Frank et al.'s (1972: xvi) definition given in (3) not only contrasts significantly from most single-issue oriented definitions of development, but also considers human beings, rather than the aggregate of given factors of production (e.g., land, population, capital, technology, specialization and mass production), as the key factor in development. Notice, e.g., that by referring to the exploitation and utilization of "the people's potential," Frank et al.'s definition presupposes that the people are and ought to be capable of perceiving the societal ills that affect them, and are/ought to be in a position to propose solutions to them. The question that arises at this point is whether a significant segment of the Sub-Saharan inhabitants, i.e., about 60% or more, has such perception and knowledge to improve its mode of life. My contention is that the vast majority of the people in this region do not possess, at this point in time, the knowledge needed to ameliorate their life. Let us examine why this is so.

In order to make the changes called for in Frank et al.'s definition of development, the target population must have what has been termed "developmental knowledge" (Boulding 1966, Uchendu 1980). According to Boulding

(1966), developmentally relevant knowledge consists of three stages: (1) folk knowledge, which involves mainly the ability to run one's family and carry out basic interactions and relations with others; (2) literary knowledge, which consists essentially of the diffusion of knowledge from one generation and/or group to another through the written word; and (3) scientific age knowledge, which involves technological knowledge and its application.

Sub-Saharan African states, according to this subcategorization of developmental knowledge, fall largely into the first category: folk knowledge. This classification is dictated by several factors, most of which are related to language and education. First, Sub-Saharan African states are at the folk knowledge stage because of rampant illiteracy. According to the latest available UNESCO statistics, illiteracy in Africa ranges on the average from 70-90 percent, as can be seen in Table I. The over-all illiteracy rate for the continent is 73.7 percent, the highest percentage for any continent or sub-continent, as indicated in Table II where this figure compares with 46.8 percent for Asia and 23.6 for Latin America. What is particularly revealing and disturbing about the statistics for Africa is that illiteracy is consistently higher among women throughout the continent;<sup>1</sup> yet it is the women who are the main custodians of the early educational development of the children in most African nations. Because of this rampant illiteracy situation, the ability of the people to bring about significant changes in their modes of life is considerably limited. The limitation is both from the point of view of initiating original changes and applying transferred knowledge from other societies to transform their own.

Second, the almost exclusive use of European languages (i.e., English, French, and Portuguese) as the media of instruction militates against the establishment of mass-education and permanent literacy. In spite of the efforts made by many African nations since the advent of political independence in the early 1960s, the provision of education to secondary and university age students remains an impossible dream as access to these levels of education continues to be severely circumscribed by the language factor (cf. Champion 1974, Bokamba 1976, Palm and Beloncle 1976, Maloba 1977). The statistics given in Table III partly reflect this problem. The low enrollments in the secondary and university education also reflect, historically, colonial policies which were designed to restrict post-primary education to a handful of Africans in order to minimize their participation in the administration of the colonies.

Third, although the number of university graduates in the region has significantly increased in absolute terms since the advent of political independence, scholarly research emanating from these intellectuals has remained insignificant insofar as its contribution to development is concerned. The reason for this is that a few African governments devote any funds to research; there is, therefore, no encouragement for scholars to undertake either practical or theoretical research. Related to this is the fact that, unlike in developed countries, most African universities and other institutions of higher education are not considered and/or used as agents of development. As a result, most African scholars are not making effective use of the literary and technological knowledge that is available to them.

Table I: Percentage of Illiteracy by Age and Sex in Selected African Nations, 1950-1971

Country & Year of Survey	Ages	Percentage of Illiteracy		
		Total	Males	Females
ALGERIA (total population)	15+	73.6	58.2	87.4
ANGOLA	15+	97.0	95.7	98.2
BENIN	15+	96.0	88.0	92.0
BOTSWANA (resident population)	15+	67.3	69.9	65.2
CAMEROON (UNITED REPUBLIC OF)	15+	81.1	69.0	93.0
CENTRAL AFRICAN REPUBLIC	15+	92.6	87.0	98.0
CHAD (African population)	15+	94.4	87.9	99.4
CONGO (PEOPLE'S REPUBLIC OF)	15+	84.4	70.0	97.0
EGYPT	15+	74.2	60.0	87.9
ETHIOPIA	15+	94.0	92.0	96.0
GABON (African population)	15+	87.0	77.8	95.2
GHANA	15+	80.6	71.0	90.0
GUINEA	6-14	37.5	33.5	41.6
	15+	91.4	86.0	96.0
IVORY COAST	15+	95.0	92.0	98.0
KENYA	15+	80.5	70.0	90.0
LIBERIA	15+	91.1	86.1	95.8
LIBYAN ARAB REPUBLIC	15+	78.3	62.5	95.8
MADAGASCAR (indigenous population)	14+	66.5	59.2	73.0
MALAWI (African population)	15+	77.9	66.3	87.7
MALI	15+	97.5	96.0	99.0
MOROCCO (total population)	15+	78.6	66.4	90.2
MOZAMBIQUE	15+	88.6	85.0	92.0
NAMIBIA (African population)	15+	61.6	54.8	68.7
NIGERIA	15+	84.6	75.0	94.0
SENEGAL (African population)	15+	94.4	89.6	98.9
SOMALIA	15+	97.0	97.0	100.0
SOUTH AFRICA (Total population)	15+	43.0	43.0	43.0
(Bantu population)	15+	59.0	58.0	59.0
(White population)	15+	2.0	2.0	2.0
(Colored population)	15+	31.0	33.0	30.0
(Asiatic population)	15+	26.0	13.0	40.0
SUDAN	15+	85.3	74.7	96.3
TANZANIA (UNITED REPUBLIC OF)	15+	71.9	57.3	85.1
UGANDA	15+	65.1	56.0	74.0
ZAIRE	15+	68.7	51.0	86.0
ZAMBIA	15+	52.7	39.0	65.5

Source: Statistics of Educational Attainment and Illiteracy, 1945-74. Paris: UNESCO, 1977

Table II: Estimated Adult Population &amp; Literacy by Continents, Major Areas &amp; Groups of Countries Around 1960 &amp; 1970

Continents, major areas and groups of countries <sup>1</sup>	Continents, grandes régions et groupes de pays <sup>1</sup>	Sex	Around 1960 / Vers 1960				Around 1970 / Vers 1970			
			Adult population 15 years and over	Illiterate adults	Literacy percentage	Literate adults	Adult population 15 years and over	Illiterate adults	Literacy percentage	Literate adults
			(000)	(000)		(000)	(000)	(000)		(000)
World total	Ensemble du monde	MF	1 869 000	735 000	39.3	1 134 000	2 287 000	783 000	34.2	1 504 000
		M	916 000	307 000	33.5	609 000	1 127 000	315 000	28.0	812 000
		F	953 000	428 000	44.9	525 000	1 160 000	468 000	40.3	692 000
Africa	Afrique	MF	153 000	124 000	81.0	29 000	194 000	153 000	73.7	51 100
		M	76 000	55 800	73.4	20 200	96 000	60 900	63.4	35 100
		F	77 000	68 200	88.5	8 800	98 000	82 000	83.7	16 000
America	Amérique	MF	259 800	43 300	16.7	216 500	324 000	41 100	12.7	283 000
		M	128 300	18 700	14.6	109 600	159 000	16 950	10.7	142 000
		F	151 500	24 600	18.7	106 900	165 000	24 100	14.6	141 000
Asia	Asie	MF	982 000	542 000	55.2	440 000	1 237 000	579 000	46.8	658 000
		M	494 000	224 000	45.3	270 000	624 000	231 000	37.0	393 000
		F	488 000	318 000	65.1	170 000	614 000	348 000	56.7	266 000
Europe and U.S.S.R.	Europe et U.R.S.S.	MF	463 500	24 500	5.3	439 000	521 000	18 700	3.6	502 000
		M	212 700	7 700	4.6	205 000	243 000	5 800	2.4	237 000
		F	250 800	16 800	6.7	234 000	278 000	12 900	4.7	265 000
Oceania	Océanie	MF	10 600	1 200	11.5	9 400	13 200	1 400	10.3	11 800
		M	5 300	530	9.9	4 800	6 600	580	8.8	6 000
		F	5 200	680	13.0	4 500	6 600	780	11.9	5 800
Developed countries	Pays développés	MF	685 400	33 900	4.9	651 500	785 600	27 300	3.5	758 300
		M	321 000	11 600	3.6	309 400	371 600	9 300	2.5	362 300
		F	364 400	22 300	6.2	342 100	414 000	18 000	4.3	396 000
Developing countries	Pays en voie de développement	MF	1 183 600	701 100	59.2	482 500	1 502 400	756 000	50.2	746 000
		M	595 000	295 400	49.6	299 600	756 400	306 000	40.4	451 000
		F	588 600	405 700	68.9	182 900	746 000	450 000	60.2	296 000
Africa (excluding Arab States)	Afrique (non compris les États arabes)	MF	116 300	94 200	81.0	22 100	146 200	108 000	73.9	45 500
		M	57 600	42 800	74.3	14 800	72 100	46 600	64.6	31 100
		F	58 700	51 400	87.6	7 300	74 100	61 300	82.7	14 400
Northern America	Amérique septentrionale	MF	136 600	3 300	2.4	133 300	161 000	2 500	1.5	158 000
		M	66 900	1 300	1.9	65 600	78 000	850	1.1	77 200
		F	69 700	2 000	2.8	67 700	82 800	1 600	1.9	81 200
Latin America	Amérique latine	MF	123 200	40 000	32.5	83 200	163 000	38 600	23.6	125 000
		M	61 400	17 400	28.4	44 000	81 000	16 100	19.9	65 000
		F	61 800	22 600	36.6	39 200	82 200	22 500	27.3	60 000
Asia (excluding Arab States)	Asie (non compris les États arabes)	MF	966 000	529 000	54.8	437 000	1 217 500	564 100	46.3	653 400
		M	485 900	218 000	44.9	267 900	613 500	224 500	36.6	389 000
		F	480 100	311 000	64.8	169 100	604 000	339 600	56.2	264 400
Arab States	États arabes	MF	52 700	42 800	81.1	9 900	68 300	49 900	73.0	18 400
		M	26 500	19 000	71.6	7 500	34 400	20 800	60.5	13 600
		F	26 200	23 800	90.7	2 400	33 900	29 100	85.7	4 800

Source: UNESCO Statistical Yearbook 1972. Paris: Unesco, 1973.



TABLE III: Primary and Secondary School Enrollments in Africa on the Eve of Political Independence

Country & Year of Survey	Primary Sch.	%	Secondary Sch.	%	
Basutoland (Lesotho)	1958	119,478	90.5	3,042	4.5
Bechuanaland (Botswana)	1958	31,193	46.4	485	1.4
Central African Rep.	1958	45,774	27.2	1,480	0.9
Chad	1959	53,973	13.8	1,473	0.4
Congo-Brazzaville	1958	78,962	70.3	3,259	3.0
Congo-Kinshasa (Zaire)	1959	1,460,753	71.5	51,671	3.0
Dahomey	1959	81,107	31.3	3,618	1.4
Ethiopia	1958	158,005	3.8	8,144	0.5
Gabon	1957	39,763	65.7	1,156	2.0
Gambia	1958	4,595	10.7	794	2.2
Ghana	1959	483,425	66.7	178,581	29.4
Guinea	1959	79,373	19.7	4,563	1.1
Ivory Coast	1957	125,727	32.7	5,104	1.4
Kenya	1958	651,758	52.1	20,291	3.9
Liberia	1959	55,026	22.4	3,397	3.3
Mali	1957	42,053	7.7	2,749	0.5
Niger	1957	11,811	3.3	395	0.1
Nigeria	1958	2,545,336	42.9	117,414	2.9
Ruanda-Urundi	1958	246,149	35.5	5,480	0.9
Senegal	1957	80,473	23.8	6,102	1.9
Sierra Leone	1959	74,481	21.0	8,277	2.8
Somalia	1958	16,485	10.2	1,828	0.8
Sudan	1959	288,395	12.8	60,941	6.5
Swaziland	1958	29,934	55.9	1,066	4.5
Tanganyika	1958	422,832	24.1	15,315	2.1
Uganda	1959	501,699	52.2	41,653	4.4
Zambia	1958	243,926	53.9	4,948	2.6

Source: Conference of African States on the Development of Education, in Africa, Addis Ababa, 15-25 May, 1961: Final Report. Paris: UNESCO, 1962.

1.2 Having thus discussed in general terms the prerequisites of development and the current status of Sub-Saharan African nations, let us consider in more specific terms the developmental problems that these nations are confronting. I should like to focus my attention in this section on the developmental goals set out in the 1961 UNESCO/UNECA Conference of African Ministers of Education held at Addis Ababa, Ethiopia, and on the effect that the language policies has had on the non-achievement of these goals.

When the UNESCO and UNECA convened a conference of Ministers of Education in Addis Ababa in 1961, a year after the advent of political independence of most African states, the primary and secondary school enrollments in the Sub-Saharan countries were as in Table III; and most of the countries had only a handful of university graduates. As a result of this and the prevailing economic situation at that time, the conference outlined an educational plan which was keyed to provide both economic growth and social progress in the continent during the next twenty years, i.e. 1961-80. The participants made the following recommendations, among others:

- (4) a. that the development of natural resources and
- b. the content of education should be related to economic needs, with greater weight being given to science and its applications,
- c. that African nations should aim at providing universal primary education while at the same time giving special attention to adult and on-the-job training (UNESCO 1962: 16).

The long term objectives for the continent included the following:

- (5) a. universal free and compulsory primary education by 1980;
- b. the enrollment of 30 percent of the children who complete elementary education, i.e., 23 percent of the age cohorts, into secondary schools;
- c. the provision of higher education mostly in Africa itself to about 20 percent of those who complete secondary schools, i.e., two percent of the age group.
- d. constant improvement of the quality of African schools and universities (UNESCO 1962).

The Conference strongly recommended reforms in the content of education as to better respond to African needs and realities. African leaders were further urged to combat illiteracy with all available means.

While enrollments at all levels (i.e., primary to university) have significantly increased, in many cases doubled and tripled (see Table IV), since the UNESCO/UNECA conference, none of the four long range goals has been met. Further, illiteracy continues to be in the 80 percentile as seen

Table IV: Enrollment at 1st &amp; 2nd levels: growth rates &amp; percentage distribution

	Average annual growth rate				% Distribution of enrollment between 1st & 2nd level					
	First level		Second level		First level			Second level		
	1960-65	1965-70	1960-65	1965-70	1960	1965	1970	1960	1965	1970
Algeria	11.5	6.8	2.0	12.4	86.8	91.1	88.8	13.2	8.9	11.2
Angola	15.7	14.7	18.0	13.4	88.7	87.6	88.3	11.3	12.4	11.7
Botswana	12.7	4.7	22.0	23.0	98.0	97.3	94.1	2.0	2.7	5.9
Burundi	9.6	4.3	12.8	9.2	96.5	96.1	95.2	3.5	3.9	4.8
Cameroon	8.8	5.3	21.0	13.8	96.8	94.6	92.2	3.2	3.4	7.8
Central African Republic	14.2	6.5	17.0	19.7	97.0	96.1	94.0	3.0	3.9	6.0
Chad	17.8	2.2	29.0	10.0	97.4	96.0	94.3	2.6	4.0	5.7
Congo	10.0	5.2	22.0	16.7	95.1	92.2	87.5	4.9	7.8	12.5
Dahomey	8.0	5.9	19.4	12.7	94.8	91.6	88.9	5.2	8.4	11.1
Egypt	4.1	1.6	13.3	7.2	84.0	77.4	72.3	16.0	22.6	27.7
Equatorial Guinea	2.7	2.3	24.0	21.0	96.9	92.4	84.0	3.1	7.6	16
Ethiopia	8.6	11.6	42.0	19.5	96.3	87.2	82.9	3.7	12.8	17.1
Gabon	6.8	4.9	17.1	9.3	95.0	82.3	90.7	5.0	7.7	9.3
Gambia	12.4	6.3	17.2	6.5	81.0	77.5	77.4	19.0	22.5	22.6
Ghana	16.3	0.1	27.0	5.1	96.5	94.8	93.5	3.5	5.2	6.5
Guinea	11.2	3.4	19.8	22.0	91.1	87.5	75.1	8.9	12.5	24.9
Guinea Bissau	-0.8	10.3	-8.4	32.0	91.6	94.2	86.9	8.4	5.8	13.1
Ivory Coast	8.2	7.4	21.0	16.6	95.2	91.7	88.1	4.8	8.3	11.9
Kenya	5.9	6.5	14.9	20.0	96.6	95.0	91.9	3.4	5.0	8.8
Lesotho	4.3	1.7	5.1	13.3	97.8	97.7	96.2	2.2	2.3	3.8
Liberia	6.2	-2.0	26.0	12.0	94.7	88.4	82.7	5.3	11.6	17.3
Libyan Arab Republic	9.4	12.2	12.8	12.2	88.3	86.7	86.7	11.7	13.3	13.3
Madagascar	8.3	6.9	17.9	11.0	93.9	90.9	89.2	6.1	9.1	10.8
Malawi	3.0	1.4	27.0	2.2	98.9	96.9	96.8	1.1	3.1	3.2
Mali	20.0	-7.3	-7.3	22.0	93.3	98.1	96.5	6.7	1.9	3.5
Mauritania	12.3	9.8	30.0	14.0	95.3	90.8	89.1	4.7	9.2	10.9
Mauritius	3.7	2.3	8.2	5.3	82.6	79.4	76.9	17.4	20.6	23.1
Morocco	7.0	1.0	19.7	7.2	90.2	84.1	79.7	9.8	15.9	20.3
Mozambique	0.3	3.3	8.6	*12.5	96.5	94.8	*92.3	3.5	5.2	*7.7
Niger	18.4	-7.1	19.2	15.5	94.9	94.8	92.7	5.1	5.2	7.3
Nigeria	-0.1	3.8	8.5	7.3	94.6	92.1	90.8	5.4	7.9	9.2
Rwanda	4.6	4.7	5.2	1.4	97.6	97.6	97.9	2.4	2.4	2.1
Senegal	...	3.7	23.0	9.4	91.3	86.3	82.9	8.7	13.7	17.1
Sierra Leone	7.9	5.7	12.6	17.3	90.8	88.9	82.6	9.2	11.1	17.4
Somalia	6.1	3.4	25.0	18.2	86.0	73.4	58.5	14.0	26.6	41.5
Sudan	6.1	14.1	6.6	6.5	81.9	81.5	86.2	18.1	18.5	13.8
Swaziland	7.5	6.9	13.3	22.0	95.3	93.9	89.0	4.7	6.1	11.0
Tanzania, United Republic	9.3	3.8	4.7	10.1	95.3	96.2	95.0	4.7	3.8	5.0
Togo	8.6	8.0	19.1	10.8	94.9	92.2	91.2	5.1	7.8	8.8
Tunisia	10.3	5.0	11.0	12.2	88.2	87.9	83.9	11.8	12.1	16.1
Uganda	1.3	4.8	-3.0	7.7	93.2	94.4	93.7	6.8	5.5	6.3
Upper Volta	9.8	3.2	21.0	7.0	95.0	92.2	90.8	5.0	7.8	9.2
Zaire	5.9	8.4	17.6	17.3	96.7	94.6	92.2	3.3	5.4	7.8
Zambia	7.4	11.1	33.0	21.0	98.2	94.9	92.5	1.8	5.1	7.5
Total	6.9	5.0	13.0	9.8	91.8	89.3	87.0	8.2	10.7	13.0

Source: Conference of Ministers of Education of African Member States, Lagos, January 27-February 4, 1976. Final Report. Paris: Unesco, 1976.

previously. Several questions naturally arise at this point. First, why have these nations failed to achieve the goals set out in 1961? Second, what specific factors have contributed to the continuation of high illiteracy rates in the region? And third, how can African states realistically approach the question of general development? That is, what steps should be taken to overcome current "underdevelopment," to use a popular but loaded term.

These are complex questions that require more detailed answers than time and space will allow me to discuss here, but I shall present what I consider to be the most fundamental pitfalls of the African educational and developmental plans. Let us examine, first of all, the first two questions, viz. why African nations have failed to achieve the 1961 conference objectives and why illiteracy has continued unabated.

There are two but related answers to these questions. First, it is an accepted fact that the social, educational, political, and economic difficulties that African states are currently experiencing have some of their roots in the colonial era. For example, the balkanization of Africa at the Berlin conference of 1885 created new countries without regard to cultural and linguistic boundaries. The integration of these nation-states into nations during the colonial period was less than successful as the colonizing powers failed to develop the needed socio-economic infrastructure, including transportation systems, to link various parts of the country together. Further, their policies of restricting educational opportunities to a small minority of the population prevented the development of an effective elite that would have governed these countries after the advent of political independence.

Second, over and above these historical considerations, the current difficulties are largely due to the failure of African leaders to articulate and pursue coherent educational plans and language policies keyed to over-all development. With the exception of Guinea (in West Africa) and Tanzania, for instance, most Sub-Saharan nations have kept intact the colonial educational systems. The few changes that have been made have been cosmetic, rather than substantial. These European-inspired educational systems do not respond to the developmental needs of Africa, yet these countries continue to devote between 25 to 35 percent of their national budgets on education. Secondary education, for instance, continues to be restricted on the average to less than 10 percent of the primary school graduates, and university education to less than one percent of the secondary school graduates in most African nations.<sup>2</sup>

Worse yet, is the fact that educational and political leaders have yet to articulate realistic goals for each cycle of education. In a field research conducted in 1976 in Botswana for his doctoral dissertation, Josiah Tlou (in personal communication) found that most of the parents and teachers questioned about the goals of primary, secondary, and university education for their children/students responded as follows:

- (6) a. Goal of elementary education: prepare for secondary education
- b. Goal of secondary education: preparation for university education

- c. Goal of university education: preparation for a degree and a job.

That is, all pre-university education is preparatory to a university education; and none of these, except the university education, is terminal in itself. These answers, which reflect the prevalent thinking in many African countries, would be impeccable if African needs were analogous to those of Western Europe, and if a large number of primary and secondary school graduates had access to secondary and university training. As it is now, none of these is the case (see Table IV).

Secondary and university educational opportunities are restricted to a small percentage of the primary and secondary school graduates not because of the availability of jobs, but rather by virtue of the testing system and the language policies practiced by Sub-Saharan African states. In particular, African educational systems require a student to pass all subjects taught at his/her level with a certain percentage. If the student fails one of these subjects, he/she must take another examination on that subject regardless of his/her high performance on other areas. Failure in the retake examination forces the student to repeat the class regardless of his/her performance on other subjects. As a result, about 50 percent of the students in many African educational institutions are class-repeaters.

If a student is successful on all subjects at each level and completes his/her education, e.g., primary education, he or she must take an admission examination into the secondary school cycle. After the successful completion of this cycle, he/she must submit to a university admission examination. In most countries each examination consists of two subjects: mathematics and the language of instruction (e.g., English or French or Portuguese). The student must pass both subjects in order to be admitted into the educational cycle for which he/she is being tested.

A number of studies have shown that this kind of educational system is exorbitantly expensive in that it produces high attrition rates and a high percentage of class-repeaters (Rideout, et al. 1969; Champion 1974; Belloncle and Palm 1976). The loss of potential human resources is considerably high as drop-outs are not channelled to other educational facilities. While the system of education and the quality of teaching contribute also to low school outputs, there is considerable consensus among African scholars that the language policies of Sub-Saharan states are largely responsible for the poor performance of the education sector (cf. e.g., Bot Ba Njock 1974, Belloncle and Palm 1976; Champion 1974; Bokamba 1976; Bokamba and Tlou 1977; Kahombo 1980). To see why this is the case we need to review briefly the language policies of African states, the conditions under which the official languages are learned and used, and discuss the problems inherent in second language acquisition in a non-native context.

1.3 Language policies in Africa can be viewed from two different periods: the colonial and the post colonial eras. With the benefit of hindsight, it can be said with little hesitation that language policies during the colonial era in much of Sub-Saharan Africa were highly restrictive in the sense that they were formulated to best serve the interests of the colonial masters, rather than those of the colonized people.

In particular, two different approaches, which may be characterized as assimilatory and accommodating, were adopted. The French and the Portuguese, whose colonial philosophies called for the assimilation of the African people to a higher "civilization," espoused the first approach: assimilation; while the Belgians and British opted for the second, accommodation. French and Portuguese colonialists felt that they had a civilizing mission to carry out in Africa, and that the use of their languages in education and administration was an obligatory and integral part of this mission (Spencer 1971; Bokamba and Tlou 1977).

In this connection, the French, e.g., regulated the use of languages in education through a series of ordinances. The first of these was the metropolitan ordinance of Villers-Cotteret of 1539 which forbade the use of languages other than French in all official functions within the territories of France, including its colonies (Spencer 1971; Bokamba and Tlou 1977). The second ordinance, promulgated on February 14, 1922, regulated private education and religious teaching in overseas territories. It stipulated that,

- (7) General education must be carried in French...The Coranic schools and Catechist schools are authorized to provide exclusively a religious education in the vernaculars. Such schools are not considered as institutions of public education (Spencer 1971: 543).

Similar ordinances governed the use of Portuguese in the former Portuguese colonies of Angola and Mozambique. As a result of these linguistic policies, the French and Portuguese colonies never developed indigenous language policies whereby African languages were used as either media or subjects of instruction in formal education.

In the former Belgian and British colonies, in contrast, indigenous language policies advocating the use of African languages as media and subjects of instruction in primary and secondary education developed thanks largely to the dominant influence of missionaries in education. The Belgian and British educators encouraged such a policy, because they subscribed to the principle advocated during the first decade of this century, and reechoed by the UNESCO in 1953, that the most effective medium of instruction in the preliminary stage of a child's education is his mother tongue (UNESCO 1953; Lewis 1962; Gorman 1974; Bokamba and Tlou 1977).

Accordingly, missionary linguists in countries like Ghana, Nigeria, Cameroon, Zaire, Rwanda and Burundi, Tanzania, and Kenya described and produced books in several major languages which became subsequently the *linguae francae* of each of these nations (see Bokamba and Tlou 1977 for details). In almost all the Belgian and British colonies the language policy called for the use of such *linguae francae* as the media of instruction in the first three years of elementary education, and for their use as subjects of instruction up to the secondary school and teachers' colleges.

While theoretically the Belgian and British language policies restricted the use of African languages in education to the first three years of elementary school and introduced the use of the official language, French or English, in the fourth year, the inadequacy of qualified teachers forced the schools to extend the use of African languages to the entire elementary cycle (Bokamba 1976; Bokamba and Tlou 1977). These policies, however, permitted and accelerated the development of several major languages in each country in the Belgian and British colonies; whereas the French and Portuguese policies prevented such developments.

The dichotomy which existed between the French-Portuguese policies and the Belgian-British policies during the colonial era disappeared, however, at the advent of political independence in the early 1960s as African nations adopted policies which required the use of the official languages as the sole media of instruction at all levels of formal education. In particular, the former British colonies of Ghana, Nigeria, Sierra Leone, Kenya, Uganda, Tanzania, Zambia, Malawi went for what was then known as "straight for English" from grade one onwards. The former French colonies and/or protectorates adopted the same type of policy with regard to the use of French (Bokamba and Tlou 1977).

This total Europeanization of the language policies was not surprising, as it had been occurring gradually in the late 1950s. The teaching of the major African languages in the former Belgian and British colonies continued, however, until around the mid 1960s when the programs were phased out in some of the countries (e.g., Ghana, Nigeria, and Zaire).

Three main arguments have been advanced in favor of the retention of the European languages as the sole media of instruction in the former French and Portuguese colonies and for the total Europeanization of the policies in the former Belgian and British colonies. These are: (1) efficiency and expediency; (2) national integration; and (3) national progress (cf. Bokamba and Tlou 1977). In the words of Dr. Duwona (1969: 3):

- (8) The reasons behind all of these changes were partly political and partly practical. On the one hand, politicians striving for national unity, for the suppression of tribalism, for rapid industrialization and accelerated economic development, saw in Ghanaian languages a barrier to progress. On the other hand, the vast majority of the people themselves wanted to enter quickly into the new material civilization to which a knowledge of English provided one of the keys. Rapid development, it was felt, could be achieved through a knowledge of English, and new experiments in English as a medium of instruction right from the first year of school were begun in the so-called Experimental Schools.

Duwona, who was only speaking about the language policy of Ghana, reflected accurately the prevalent thinking of that period in the continent.

I have argued in detail elsewhere (Bokamba 1976; Bokamba and Tlou 1977) that while some of the reasons cited in favor of the use of European languages in education are true, the conclusion that African languages cannot adequately

serve the educational needs of Africans is unwarranted. It suffices to point out here that the fallacy here stems from two basic assumptions in the argument of the proponents of the Europeanization of the language policies in Africa: First, it was and is still assumed that the adoption of an African language as the medium of instruction automatically precludes the teaching of international languages such as French, English, and Portuguese. This, of course, is not true. Second, it is assumed erroneously that because major African languages have not yet been fully developed in all ranges or registers of discourse, they cannot eventually be so developed. Ethiopia, Somalia, and Tanzania where indigenous national languages (i.e., Amharic, Somali, and (Ki-)Swahili, respectively) have been adopted as the media of administration and education are showing that this is possible.

The main reasons for the preference of Europeanized language policies over Africanized ones, it seems to me, are assimilation and expediency: it was both practically and politically expedient for African leaders to continue with and/or adopt their former colonial master's languages as the sole media of instruction. This short term solution, in my considered opinion, also had its political benefits: it permitted the new small elite to retain power and other privileges they had without competition. (see Scotton 1978 for an interesting discussion of this point.) Whether or not this is accurate is not at issue here; what concerns us is the over all evaluation of the present policies vis-à-vis development. How successful have the current policies been and on what basis do we evaluate them?

Although I do not have empirical evidence regarding the actual effect of the current language policies vis-à-vis education in Sub-Saharan Africa, there is strong circumstantial evidence to suggest that the failure of African states to achieve the developmental goals set out at the 1961 Addis Ababa Conference is largely attributable to the current language policies. There are several reasons for this:

- (9) a. The European languages which are currently serving as the official languages and sole media of instruction in Africa are learned as third or fourth languages in multi-lingual societies where illiteracy is rampant and where over 90 percent of the population does not speak them;
- b. The vast majority of the elementary teachers who are required to teach every subject in these languages have a poor command of them at best. Their secondary school colleagues do not fare any better.
- c. Since the official language is rarely, if at all spoken at home, the student receives no reinforcement at home nor at the community level. The combination of these factors, therefore, places the learner in the most unfavorable condition imaginable.

Needless to point out, this situation has impacted negatively on the students' academic performance. Several African and Africanist educators and researchers have in fact observed that the foreign language skills of primary and secondary school graduates are highly inadequate as to permit them to function well in the next cycle of studies (see, e.g.,



Verbeke 1966, Ansre 1968, Champion 1974, Bot Ba Njock 1974). In an extensive experiment conducted in the elementary schools of Kinshasa, Zaire in 1965, for example, Verbeke (1966: 456-57) found that elementary school graduates had a maximum vocabulary baggage of 1,000 words after ten hours of French studies per week for six years. According to Verbeke, the minimum vocabulary acquisition that an elementary school graduate should have in order to function adequately in secondary school is between 2,000 and 3,000 words. Findings similar to Verbeke's have been reported from other African nations (Bot Ba Njock 1974, Champion 1974).

We know from studies on first language acquisition that the passive vocabulary of a 2½ year child ranges between 2,000 and 3,000 words, and that by the time he/she reaches the age of 45 months his/her vocabulary has increased significantly and his/her grammatical competence approximates that of a native speaker. By the time that this child begins school at the age of five years he/she has almost complete mastery of his/her language. If Verbeke's findings are taken as an accurate reflection of the level of linguistic development of the average African using an official language, it becomes evident why, given the learning conditions described above, attrition rates are extremely high in African schools (cf. Rideout 1969, Bot Ba Njock 1974). Students simply have increasing difficulties in assimilating materials in a language that they control so poorly.

This fact is clearly attested at the end of the primary and secondary education cycles where the greatest attrition rates occur. These areas constitute the greatest bottlenecks precisely because the admission examinations are given at these junctures. As stated previously, the examinations involve superficially two subject areas: mathematics and the language of instruction (i.e., English or French or Portuguese); but in fact what the students are tested on are two aspects of the same subject: the language of instruction. In one case they are tested on the language skills per se, and on the other they are examined on the application of that language to mathematics.

There is a general consensus that this system of selection perpetuates unnecessary elitism, while at the same time barring educational opportunities to otherwise competent individuals. This is particularly true for students who are weak in language skills but strong in other subjects, e.g., sciences and mathematics (cf. Maloba 1977). One of the consequences of this selection method is that there are more humanity and social science majors in African universities than (pure) scientists. That is, potential science majors get weeded out before they reach the university level. What is deplorable about this situation is that government leaders do not understand why there are so few students specializing in sciences at a time that expertise in these fields is so much in demand.

If the lack of opportunities for higher education is deplorable at the national and group level, it is even more so at the personal level. This is the case because education is the key to a better life. Education provides an individual with economic rewards, careers, social prestige, other social values, and a new way of thinking and dealing with life. The level of education that an individual attains often determines his upward mobility in society and his ability to participate actively in its

transformation. Denial of educational opportunities to an individual deprives him not only of these privileges, but also robs the society of the contribution that such a person could make. In short, the present educational systems in Africa are inadequate, because they are ill-adapted to the continent's needs and contemporary world realities. That this should be the case is not at all surprising for, as Bot Ba Njock (1974) correctly observed, "the school of yesterday is an imported product, conceived under different circumstances, for different societies, and is a different answer to different problems." That is, this kind of education was conceived to respond to a colonial situation, but not to an independent Africa.

In addition to these areas of development, the current language policies have also affected political development in Sub-Saharan Africa in a number of respects. Consider, for instance, the question of participatory democracy. The advent of political independence in the 1960s was expected to inaugurate a new era in which the principles of equality before the law and government by and for the people would be the guiding lights. But this expectation has not materialized for several reasons which we need not go into in this paper, except one: the role of language in participatory democracy.

Kelman (1971) and others (e.g., Fishman 1972, Edelman 1977) have argued persuasively that language is a uniquely powerful force in unifying a diverse population and in involving individuals/subgroups in the national political system by providing sentimental and instrumental attachments,<sup>4</sup> and often by inducing acquiescence (Edelman, 1977). According to Kelman (1971: 25),

- (10) An individual is sentimentally attached to the national system to the extent that he sees it as representing him - as being, in some way, a reflection and an extension of himself.

Similarly,

- (11) An individual is instrumentally attached to the national system to the extent that he sees it as an effective vehicle for achieving his own ends and the ends of members of other systems.

Assuming that under the best conditions the legitimacy of a national political system resides on the consent of the governed, Kelman goes on to observe that such a system is seen as deserving of an individual's loyalty to the extent that it "provides for a smoothly running society in which individuals can participate to their mutual benefit and have some assurance that their needs and interests will be met."

The concepts of sentimental and instrumental attachments suggested by Kelman (1971) and the role they play in facilitating national integration are obviously crucial for political development. As is well known, most African nations have a single political party system. In spite of the apparent difficulties that such a system presents in the exercise of political rights, it can be said with little hesitation that citizens of liberated Sub-Saharan nations have the right to exercise the principle of one-man-one vote. Their other political rights, however, are considerably curtailed, if not completely denied, by the current European-oriented language policies.

Specifically, given that English, French, and Portuguese, rather than African languages, are the official media of administration, commerce, and diplomacy, and that the average citizen does not speak any of these languages, he/she cannot meaningfully participate in the political affairs of his/her country. In particular, the average citizen does not know what his/her constitutional rights are partly because the constitution is written in a European language. He/she does not know what his/her legal rights are, because the laws are also written in a European language that he/she cannot speak or understand; he/she cannot understand the party ideology, political goals and directives, nor can he/she follow parliamentary debates on important issues of his/her nation because they are conducted in a foreign language. Further, the average citizen cannot become a parliamentarian, because of the official language barrier. In short, Mr. or Mrs. Citizen has very little sentimental and instrumental attachments to the national political system largely due to the language barrier.

The implications that this situation have for participatory democracy and integrative political developments are rather obvious. Given the fact that illiteracy is rampant throughout the region, and that an estimated 70-80 percent of the population of most African states is rural, the pursuit of the current language policies not only makes participatory democracy an impossible dream, but also denies the society as a whole the possible contribution that the vast majority of the population can make towards nation-building and development. One clear consequence of this situation has been the questioning of the legitimacy of the national political system as evidenced in the various civil wars and coups d' état which have occurred in the past two decades. These conflicts have in turn deepened the dependency of the state to the former colonial powers and their allies. Another implication of the lack of sentimental and instrumental attachments is that political development and integration are made difficult to achieve, and an internal colonial situation is created as a small ruling political elite maintains power without the consent of the governed through coercion. As will be discussed shortly, this situation has often led to the lack of meaningful or people-oriented economic development.

The inability of the average citizen to participate meaningfully in the formulation of political policies also translates into an inability to contribute to the formulation of the economic ones. This naturally follows from the fact that economic policies and/or decisions are derived from political options. Consider in this regard, for instance, the case of the economic infrastructure found in most African nations. This system is based on what is referred to in economic literature as the "trickle down theory" or "big is beautiful" whereby industrialization is seen as providing wealth and economic development from the urban centers to the rural areas, and from the rich urban dweller to the average citizen. This is the economic structure which has brought big tractors to African farms, big extractive industries in urban centers, and export-import businesses to such centers.

As we know today, however, this type of economic infrastructure, largely inherited from the colonial era, has produced mainly economic

growth but not economic development. What appears to be often ignored by African proponents of the large-scale industrialization approach is that such a system is highly dependent on western technology and technicians, which African nations do not have, and also based on what John Weeks (1975: 92-93) terms "elite consumption development dynamics." For example, the manufacturing industries drain important resources from the rural regions and produce goods that cater largely to the elite class and other urban dwellers without providing corresponding returns to the rural inhabitants. The second factor often ignored or taken for granted by African leaders is that industrialization which is based on the capital-intensive approach seeks, first of all, to maximize profit; and as such, will largely restrict employment to the literate and best qualified job seekers. One's opportunities for employment and upward mobility in this kind of economic system depends on one's knowledge of the official (European) language; thus language becomes, once more, a barrier to personal and national development.

The trickle down economic approach contrasts with what E. G. Schumacher (1973) has aptly termed "small is beautiful" approach where economic development results from the education, organization, and discipline of the people themselves wherever they may be. As we have seen, however, formal education continues to be restricted to a small percentage of the African population. This situation is worsened by the relapses into illiteracy which occur when elementary school graduates are unable to continue their schooling and the use of the official language after being out of school for several years. Further, since mass or adult literacy remains only a dream for most African states, the kind of economic development proposed by Schumacher cannot occur in the near future.

It should be evident from the discussion presented thus far that real development, as defined in (3) above, cannot be achieved in Sub-Saharan Africa under these conditions. Fundamental changes must occur in the areas of education and language policies before any genuine development can be expected. This brings us to the third question raised at the beginning of this part of the paper, viz. what specific steps should Sub-Saharan African nations take to overcome underdevelopment.

## 2.0 TOWARDS A REALISTIC DEVELOPMENT MODEL

Sub-Saharan Africa, like the rest of the continent and other developing regions of the world, is fraught with all sorts of difficulties, and one cannot hope to solve them over night. Basic to these difficulties, however, are developmental problems or questions of realistic reorientation of objectives for the Africa of the 1980s.

I am not an expert in development, and have no illusion regarding the magnitude of the problems involved in changing a socio-economic system. It is my humble and considered opinion, however, that in light of the facts detailed in this paper the answers to the problems discussed here lie in a fundamental restructuring of two related areas of development: the school system and the language policies. Sub-Saharan African nations must, either separately or together, articulate a prioritized and realistic set of developmental goals. These goals must be formulated on the basis of an inventory of needs and resources in each country, and should be articulated

in a coherent and comprehensive manner. Once these objectives have been set, the schools and other institutions of higher learning, e.g., research institutes, must be restructured as to help meet these objectives. And naturally, the language policies of the region must be reformulated as to be consonant with such goals.

2.1 The restructuring can be undertaken essentially in two directions once the goals for each country or the region have been determined. The first change must be a transformation of the entire educational system. Instead of the current European-based system which emphasizes theoretical training and is keyed to preparing all students for university education, the educational system of the Africa of the 1980s must emphasize practical training. It must set up goals for each educational cycle: primary, secondary, and university. Following Nyerere (1967), I would like to suggest that the goals of elementary education ought to be to provide the pupils the type of training that will prepare them for community service at the local level soon after their graduation, just in case they do not continue their studies at the next cycle. Given the fact that between 70-80 percent of the population of most Sub-Saharan African nations is rural, the new primary school system would have to include basic training in agriculture, carpentry, masonry, arts and crafts, and family hygiene. Such a program would enable youngsters to become gainfully employed either upon graduation or after a one or two year post primary training in an area of their choice, just in case they cannot be admitted into the general secondary school.

With regard to secondary school education, its goals ought to be to provide an education that will prepare the graduates for national service (Nyerere 1967). That is, secondary school training should lead to employment, in different sectors, at the national level. The graduates can, e.g., serve as civil servants, elementary school teachers, electricians, plumbers, auto mechanics, masons and carpenters, and clerks. What this means is that the secondary school system will have to include, apart from the usual university preparatory curriculum, programs that will lead to technical or professional specializations. The advantage of this type of program is not simply that it will provide secondary education to more citizens, but it will also provide badly needed low-level technicians. Programs such as these were available in many African nations during the colonial era as an option for students who were not qualified for admission into the general secondary school, but they lost their attraction after independence. The only training of this type of  $\phi$  that is available at the secondary education level are the so-called Teachers' Training Colleges and Professional Schools (for mechanics and carpenters).

University education, in contrast, must have as a goal the training of people for national and international services (Nyerere 1967). Specifically, university training, with its multiple disciplines, should provide the kind of education that will lead to employment at both the national and international community levels. Over and above this goal, the university must become the central agent of national development by engaging in both practical and theoretical research that will enable the country or region concerned to become increasingly self-reliant.

2.2 Once the objectives of each educational cycle have been set, it becomes relatively easy to formulate a language policy that is consistent with these objectives. Assuming that the nation or region concerned is sincerely determined to pursue the educational plan just outlined, the language policy that would be consonant to it would be a multilingual one. That is, this language policy will include (1) the use of the appropriate regional language(s)<sup>3</sup> as medium or media of instruction at the elementary and secondary school levels; if a country/region has already adopted a national language, it will serve this purpose; (2) the teaching of an appropriate international language (e.g., French for francophone African nations, English for anglophone countries, and Portuguese for lusophone countries) as an obligatory subject in all three educational cycles; and (3) the use of an appropriate international language as the main medium of instruction at the university and post-university levels. If a country or region has already adopted a national language, as in the case of Ethiopia, Somalia, and Tanzania, for example, this language would also be used as medium of instruction for selected subjects.

2.3 If these educational and language policy plans are successfully adopted and implemented, the transformation of the political and economic sectors will follow more or less automatically in that an increasingly literate populace, using an indigenous national language and participating actively in the job market, will become more and more involved in the political and economic affairs of their country. That is, the population will develop sentimental and instrumental attachments to the national political system. A language policy which calls for the use of national *linguae francae* or a national language, for instance, will likely result in the writing of important political and judicial documents in these languages. Hence, the people will be able to participate to a certain extent meaningfully in the affairs of their country.

Similarly, the availability of more medium and high level national cadres at different areas of the national economy will give them more say and influence in the development of the economy than previously. Three of the difficulties facing Sub-Saharan African economies are the lack of diversification, processing industries, and an adequate transportation system. These problems persist largely because African nations do not have at the moment adequate national technicians. If the educational plan proposed here were to be adopted, these problems would be solved in a relatively shorter time than if the current educational systems were to be maintained.

2.4 In order to generalize and accelerate development in Sub-Saharan Africa there must be increased emphasis on adult literacy; formal education alone will not considerably reduce or eradicate illiteracy for a long time to come. Illiteracy, as Dr. A. M. M'Bow, the General Secretary of the UNESCO, pointed out in his annual message in 1979, is a world problem of the same magnitude as malnutrition and poverty. As the comparative statistics in Tables I and II show, this problem is particularly acute in Africa. To combat it, African governments and cooperating organizations must devote considerable sums of moneys and conjugate their efforts well. In particular, African governments, churches, private organizations and

international agencies such as UNESCO and the World Bank must cooperate in the development of programs which will be keyed to personal and community development, especially for the rural areas. Adult literacy programs such as those carried out by the Summer Institute of Linguistics (SIL) and those of the Afrolit Society, a UNESCO affiliate based in Nairobi Kenya, ought to be particularly encouraged by African governments. Such organizations, given their long experience in the field, could provide a model for large-scale programs for the continent.

I should like to point out here that Sub-Saharan Africa, or any part of the continent for that matter, does not want any type of adult literacy program: it needs what I would like to call a functional and developmentally relevant literacy program. A functional and developmentally literacy program is one which responds to the daily needs of the society/sub-society in question by incorporating into the teaching of reading and writing developmental themes, information, and techniques on how to improve the people's way of life. Specifically, reading lessons in any adult literacy manual should be based on topics deemed to be of interest to the community, as determined by its representatives. For instance, if the community or society in question is involved in agriculture, fishing, and trade, the reading materials should provide the kind of information that will encourage the people to introduce relevant modern techniques to improve these areas of their life. Notions of elementary/basic mathematics, personal and community health care should also be incorporated in such manuals. It is this type of program, rather than one that is aimed at what might be called "pure literacy," that will attract and retain the learners. The Afrolit Society, under the able direction of its Secretary-General, Dr. Charles T. Hein, has been using this approach very successfully.<sup>6</sup> In short, it is the type of changes which have been suggested all along this paper that constitute what I regard as a comprehensive and yet realistic developmental model for (Sub-Saharan) Africa.

### 3.0 CONCLUSION

I began this paper by claiming that language, just like education, is critical to personal and national development. In the course of the presentation I have attempted to show, with facts and figures, how intricate the relationship is between these three domains: language, education, and development. In the absence of empirical findings, I have used circumstantial evidence to conclude that the failure of African states to achieve the developmental goals set out at the 1961 Addis Ababa conference was largely due to the current language policies which call for the exclusive use of European languages as media of instruction. The discussion of this issue led to the presentation of what I consider a realistic and comprehensive model of development involving the transformation of the school systems and language policies, and the incorporation of the schools and literacy programs as agents of development.

Bearing in mind the magnitude of the task to be undertaken and the difficulties involved in transforming a society, I have assumed throughout this presentation that African scholars, government and non-government leaders are aware of their state of underdevelopment and are desirous to overcome it as quickly as possible. My assumption is not a fortuitous one: it is based on expressed and published works of African leaders and

scholars (cf. Kalanda 1965, Nkrumah 1965, Nyerere 1967, Mobutu 1973, Bot-Ba-Njock 1974, Kempf and Mudimbe 1977, Kashoki 1979, Kahombo 1980, Ansre 1980), among others. If the desire to modernize and improve the people's mode of life is sincere, the apparent difficulties that might exist in the adoption of the developmental plan proposed here would not constitute an insurmountable obstacle: the will of the people will finally prevail.

At the beginning of this paper I also stated that the current socio-economic difficulties confronting African states are largely attributable to the Africans themselves, especially the politically powerful elite. The more I look at the African socio-economic systems, the more I become convinced that J. Weeks (1975: 99) was right when he observed that:

- (12) ...the pattern of development or economic growth chosen (in any country) arises from the economic interests of the politically powerful. The fact that a pattern of development generates intractable social problems is not sufficient to stimulate redress of the situation; this will occur only if the politically powerful see their interests being served as well in some alternative arrangement as in the existing one, or if the problems deepen into a crisis which fundamentally alters the concentration of power.

To avoid either the continuation of underdevelopment or the disruptions that accompany revolutions, the full potentialities of the African people must be developed. Education, literacy, and the use of selected African languages in these tasks will be critical ingredients to a peaceful development in the Africa of the 1980s.

#### NOTES

\*A shorter version of this paper was presented at the 9th International Conference on the Unity of the Sciences under the title: "Language Policies and National Development in Sub-Saharan Africa: Issues for the 1980s," at Miami Beach, Florida, November 1980. The present version, with the title: "Language and National Development in Sub-Saharan Africa," was written for and read at the 7th Annual Third World Conference, organized by Governors' State University and held at Chicago, Illinois, March 1981. The paper is considered a progress report, because of the lack of up-to-date statistics on educational and literacy developments, and of published work on the use and impact of Amharic, Somali, and Swahili which have been adapted as the national languages of Ethiopia, Somalia, and Tanzania, respectively. I am, therefore, continuing the research. In the meantime, I am grateful to Nzongola Ntalaja (Howard University) and Rudolph Troike (University of Illinois) for their comments on this paper. I alone am responsible for any errors of facts or interpretation.

<sup>1</sup>We are aware of the fact that these figures are outdated, but we believe that the situation has not changed significantly even if recent statistics were made available.



<sup>2</sup>These restrictions are not dictated by the availability of jobs; most African nations can create at this moment as many jobs as they wish without stretching their resources. One of the main economic problems facing Africa today is under-exploitation of natural resources, including human resources, rather than unemployment.

<sup>3</sup>Rideout, et al. (1969: 61) show, for instance, that the average wastage rate in the secondary schools in Zaire in 1966-1967 was 29.5 percent; and in 1967-1968 it rose to 35.1 percent for the classes of 1961-1962 and 1962-1963, respectively. The wastage rates between years were extremely high. For example, between the fifth and sixth year of secondary school the wastage rate was 42.4 percent during the academic year 1966-1967, and 65.9 percent in 1967-1968 for the same class period. These figures are paralleled elsewhere in Africa.

<sup>4</sup>It is also recognized that language, especially in a multilingual society, can be a disruptive force (Kelman 1971, Fishman 1972). As Kelman (1971: 21) aptly observes:

However, some of the very features of language that give it this (unifying) power under some circumstances may, under other circumstances, become major sources of disintegration and internal conflict within a national system.

<sup>5</sup>All African nations have recognized regional languages which are often referred to as "national languages" or *linguae francae*. Nigeria, e.g., has three such languages: Hausa, Igbo, and Yoruba; Zaire has four: Kikongo, Lingala, Swahili, and Tshiluba. The adoption of such languages as media of instruction would, therefore, create no special problems (cf. Bokamba 1976; Bokamba and Tlou 1977 for detailed discussions of language policies and planning).

<sup>6</sup>I have read some of the materials prepared by the Afrolit Society, and participated as a consultant in one of their workshops for a month, September 1980, in Zaire to develop materials for the Lingala speaking regions of Zaire. That workshop provided me first hand information on the society's approach to literacy work, and convinced me of the effectiveness of their materials. I am grateful to Dr. Hein, the society's secretary-general, for affording me this opportunity.

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PRAGMATICS AND SYNTACTIC DESCRIPTION\*

Georgia M. Green

It has long been recognized that the acceptability of example sentences under test conditions depends on what the informant believes about the "real world," and particularly about the beliefs and intentions of the presumed speaker of the example sentences. After providing several detailed examples of the phenomenon, a history is given of how it has been dealt with by generative grammarians. It is argued that the problem is not strictly within the province of grammar; rather, the grammar should be designed to generate freely such forms as she knows who did I appoint and a general theory of communication, as sketched here, should provide principles regulating its potential use.

The working title for this paper was "On the Nature of 'Pragmatic Rule Government.'" It was abandoned because it might be understood as giving the (false) impression that I believe there is any such thing. What I can offer on this subject is 1) a description of the state of affairs which this unfortunate term has been used to refer to, and after giving a brief history of how generative grammarians have attempted to deal with this phenomenon, 2) a sketch of what seems to me a more reasonable way of describing such states of affairs.

I. The phenomenon

In its most general form, the problem is that sometimes the acceptability of example sentences under test conditions depends on the informant's assumptions about the beliefs and intentions of the presumed speaker. Stated this broadly, this is nothing new. Generative grammarians knew even in the 1960s that the acceptability of a sentence like (1) depends on whether or not one assumes that the speaker meant for he and John to refer to the same person.

(1) He thinks John is stupid.

Likewise, they knew (Lakoff 1969) that the relative acceptability of questions and conditionals with some and any as in (2) depends on assumptions about the attitude of the presumed speaker.

(2a) If you eat some spinach, I'll cook hamburgers all week.

(2b) If you eat any spinach, I'll cook hamburgers all week.

Sentence (2a) is considered acceptable if it is taken as offering a bribe, and it is understood that the speaker believes that the addressee considers having hamburgers all week desirable; sentence (2b) is considered acceptable if it is taken as a warning not to eat spinach, and cooking hamburgers all week is understood to be something that the speaker assumes the addressee would consider undesirable.

Other cases involve "obviously" syntactic phenomena such as question formation and relativization. Thus, in many dialects of English, Subject-Auxiliary Inversion (SAI) is found not only in direct questions such as those in (3), but also in embedded questions, as in (4).

- (3a) Who did you appoint?  
 (3b) Did you appoint Tony?

- (4a) She wants to know who did I appoint.  
 (4b) He asked did I appoint Tony.

However, the optional inversion in embedded questions is possible only if the referent of the subject (or experiencer) of the verb embedding the question is presumed not to know the answer. Thus, the sentences in (5) are unlikely to be considered acceptable.

- (5a) She already knows who did I appoint, so you needn't  
 dissemble any longer.  
 (5b) He's figured out did I appoint Tony, but he promised not  
 to tell.

Or, to take another example, sluicing (Ross 1969), as in (6), is also sensitive to whether or not the individual who is implied to want to know the answer to the corresponding question does in fact know the answer. This individual is often the speaker (6a) or the addressee (6b), occasionally the referent of the subject (6c) (or dative experiencer (6d)) of the predicate implying (and embedding) the question, but it isn't always, as (6e) testifies. Thus, my saying (6a) implies that I don't know what John broke; (6b) is acceptable only if it is assumed that the presumed speaker believes the addressee doesn't know what John broke, and (6c) implies that John doesn't know what he broke. Sentences (6d) and (6e) imply that the speaker, perhaps among others, doesn't know what John broke, even though the subject of the verb embedding the sluiced question is not a NP referring to the speaker.

- (6a) John broke something, and I'm afraid to ask what.  
 (6b) John broke something--guess what.  
 (6c) John broke something and he needs to know what.  
 (6d) John broke something, but it's not clear what.  
 (6e) John broke something, but he won't say what.

If we construct corresponding sentences where these assumptions seem to be denied, we see that they are less acceptable, or induce implicatures.

- (7a) John broke something, and it's clear what.  
 (7b) John broke something and you know what.  
 (7c) John broke something and he told me what.

Thus (7a) and (7c) are either unacceptable or implicate that the speaker assumes that the addressee doesn't know what John broke, inviting or daring him to ask. And (7b) will either be judged unacceptable or as implicating that the speaker doesn't know and would like the addressee to tell her. Their unreduced counterparts do not have these properties. The discourses in (7'), where there is no sluicing, are not as bizarre as the sluiced ones in (7'').

- (7a') John broke something, and it's clear what he broke.  
You needn't investigate further.
- (7b') John broke something, and you know what he broke.  
I don't want to know, but you'd better get it replaced.
- (7c') John broke something, and he told me what he broke.  
You needn't harass him any more.
- (7a'') John broke something, and it's clear what.  
You can stop harassing him about it.
- (7b'') John broke something, and you know what.  
Don't tell me; just replace it.
- (7c'') John broke something, and he told me what.  
You can stop harassing him about it.

One can construct examples such as (8) where the semantics of the utterance seems to preclude the assumption that anyone relevant is ignorant of the answer:

- (8a) John went out with someone, and we all know who.
- (8b) John went out with someone, and I don't have to say who.

But even here, these will be judged acceptable if the informant supposes the presumed speaker to be ironically inviting the addressee to make a guess (which is almost assured of being correct).

So--if we assume that these sluicing constructions are derived by a rule of grammar, and that the above examples judged unacceptable are as ungrammatical as ones like (9), then we seem to be put in the position of having to say that the applicability of a rule of grammar is conditioned by the speaker's beliefs and intentions, or by assumptions about the speaker's beliefs and intentions.

- (9) \*John bought something and I washed what.

One final example. The extraposition of relative clauses as in (10) is sensitive to the speaker's judgment that the proposition implied by the relative clause is "new" to the addressee, and to a concomitant desire to assert it (Ziv 1976).

- (10) A man came in who had three ears.

Thus, a relative clause cannot be extraposed when its content is intended to function restrictively by virtue of its representing a proposition which the speaker assumes to be presupposed by the addressee. Consequently, (11b) cannot be used as an answer to (11a), although (11c) can.

- (11a) I heard some of Susan's relatives were coming this week.
- (11b) Yes, the uncle arrived yesterday who's so rich he could buy Chicago.
- (11c) Yes, the uncle who's so rich he could buy Chicago arrived yesterday.

Of course, these are not the only cases linguists have been led to describe in terms of "pragmatic control". Apparently almost all rules ever proposed by a generative grammarian either have pragmatic control (e.g. pronominalization, SAI in questions) or pragmatic conditions on them (like the coexistence presupposition requirement on the items

affected by Dative Movement (Green 1974) and Subject-to-Object Raising (Postal 1974)) or pragmatic motivation in that they seem to serve a clear rhetorical or processing function, like Extraposition and Relative Extraposition. Many rules, including Passive, seem to involve a combination of kinds of pragmatic conditions. This means that the problem of the proper role of pragmatics with respect to syntactic description cannot be dismissed as merely an interesting puzzle involving a few insignificant, unrelated, and restricted phenomena. The involvement of pragmatics is pervasive.

## II. A bit of history

But dismissal is exactly what the first reaction of generative grammarians appears to have been--a sort of linguistic Benign Neglect. The first description of rules for pronominalization acknowledge the undeniably pragmatic condition of intended coreference of individuals named by the mentioned NPs. People said things like

- (12) Pronominalization applies to structures like John hurt John unless the Johns are different people.

promiscuously mixing categories. But the grammars they wrote took no account of this, and they were silent on the question of how this constraint was related to linguistic competence.

Beginning in about 1965, ~~attempts~~ were made to incorporate various kinds of pragmatic conditions directly into the system then available for syntactic description. Thus, Postal, McCawley, and Chomsky all made proposals for incorporating a system of indexing syntactic nodes for coreference so that the kind of identity required for pronominalization and relative clause formation could be represented as syntactic information, and represented directly in the syntactic structures. George Lakoff, in his dissertation (Lakoff 1965) also supposed that restrictions on usage were all syntactic in nature. Thus, he claimed that the unacceptability of (13) reflected the fact that beware bore a syntactic feature which said that Question-Formation could not apply to it.

- (13) Did you beware of John?

But Lakoff's system would break down when confronted with cases like (4) and (5): one cannot say that know is marked [-SAI in Complement] to account for the unacceptability of (5a) because SAI in the complement of know is fine in (4a). Since the real restriction on beware is that it be used to convey or refer to the conveying of a warning, it won't do to say it is [-R: Q] to account of the unacceptability of (13), and [-R: WH-Rel] or [-SD: WH-Rel] to account for the unacceptability of (14), because in (15) and (16) those rules presumably apply to give acceptable results.

- (14) John met a man who can beware of dogs.

- (15) What do I need to beware of?

- (16) You must appoint as dean a man who will beware of outside agitators.



In the late 1960s, under the rubric Linguistic Anarchy Notes, Postal circulated some observations which seemed to entail that rules of grammar were sensitive to facts of arithmetic (Postal 1977). Postal was concerned with how grammatical theory could provide descriptions which would distinguish the (a) sentences in (17-19) from the (b) sentences.

(17a) Six Arabs murdered a seventh.

(17b) Six Arabs murdered an eleventh.

(18a) The four Stuart kings were James I, Charles I, Charles II, and James II.

(18b) The five Stuart kings were James I, Charles I, Charles II, and James II.

(19a) There were five or ten deans standing around.

(19b) There were five or eleven deans standing around.

Such distributions were taken, in some quarters at least, to represent a difficult and interesting puzzle for the then relatively monolithic theory of transformational grammar, but no attempt was ever published that attempted to give a motivated account of such facts.

About the same time, a second year graduate student made some observations about the occurrence of the emphatic particles too and either in conjoined sentences which compare or contrast properties of the subjects, like those in (20).

(20a) Jan's a lawyer and Ron's a lawyer too.

(20b) Jan's a lawyer, and her husband's a professional too.

(20c) Ron isn't interested in sports, and Bill couldn't tell a zone press from a fast break either.

Specifically, she observed that for this usage of too/either to be considered appropriate, the predicate of the second clause has to be taken as being implied by the predicate of the first clause, the simplest case of this being the identity of predicates found in (20a). Examples like (20c) are more complex cases where the implication is not a strictly logical or semantic one, but one which depends on contingent assumptions about real-world relations among properties (e.g. whether being interested in sports entails or implies the ability to tell a zone press from a fast break). Now her approach was to try to describe this relationship as part of the particle insertion rule (Green 1968) or the deep structure (Green 1973), and no one told her that this was wrong or dumb, though the former proposal clearly required making the rules of the grammar (too/either insertion) sensitive to properties of speakers (whether they believed that some predication implies some other predication), and this involves a gross category error.

Indeed, this was just the first of many cases touted as demonstrating the role of presuppositions in syntax, still without explicit attention to how description of langue (a formal description of a static system) could sensibly require reference to properties of individual language users.

Interestingly, between the time George Lakoff first delivered a paper on this topic in 1969, and the time it appeared in print (Lakoff 1971) in 1971, the title changed from "Presuppositions and Relative Grammaticality" to "Presuppositions and Relative Well-formedness," indicating an appreciation of the logical problem. Well-formedness was usable to refer to appropriateness with respect to a context; grammaticality was an absolute, and a function of the properties of a linguistic description. In any case, the assumption here was that since the presupposition-dependent and context-dependent phenomena were rule-governed just as much as presupposition-free and context-independent syntactic phenomena, then the system provided by linguistic theory for the description of that aspect of linguistic competence that is displayed in grammaticality judgment would have to countenance rules relating linguistic forms to language users' beliefs and intentions. Thus, it was assumed that grammar would include such statements as (21), or equivalents thereof.

- (21) The Sluiced construction can be generated (The rule of Sluicing applies) if it is understood that the referent of the subject or experiencer of the predicate embedding the sluiced construction is ignorant of the answer to the question corresponding to the sluiced construction.

Meanwhile, Grice's paper "Logic and Conversation" (Grice 1975), which had been circulating in unpublished form for several years began to have an effect on how linguists thought about the relations between grammar and usage. Grice's paper, addressed to logicians, suggested that the conflicts between ordinary language and formal logic could be resolved by showing how the annoying connotations and implications of ordinary language usage could be attributed to inferences from the assumption that speakers were conforming to a principle of cooperation in participating in conversation, tailoring their contributions to their conception of the task at hand, according to several corollary principles. George Lakoff, in a much-quoted paper written with David Gordon (Gordon and Lakoff 1971), interpreted Grice's proposal as sanctioning the codification of likely implicatures into conversational "postulates", and the incorporation of speech act participants' beliefs and intentions into derivations in the guise of transderivational constraints. Thus, Gordon and Lakoff claim that a rule of You-Tense Deletion, responsible for deriving sentences like (22a) from structures similar to that of (22b) applies if and only if the logical structure L of the sentence, taken in conjunction with Con<sub>1</sub>, a class of contexts, add the set of Conversational Postulates entails 'Unless you have some good reason for doing X, you should not do X.'

- (22a) Why paint your house purple?  
 (22b) Why do you paint your house purple?

But their Con<sub>1</sub> is just an obscure way of referring to the speech act participants' beliefs and intentions about the context of the speech act as a set of propositions, each of which is true of the context. This strategy of describing matters of speakers' intentions and beliefs as if they were semantic matters of truth, carried further in Lakoff 1975, only obscures the relation between form and its interpretation.

### III. An alternative

The approaches sketched so far to the problem of giving an account of the role of pragmatics in linguistic description have been either 1) to interpret distributions of linguistic expressions that depend on users' beliefs and intentions as reflecting arbitrary formal characteristics of the expressions, or 2) to redefine the task of syntactic description as one of description of communicative behavior generally, so that it could sensibly accommodate rules relating syntactic derivations to language users' beliefs and intentions.

But there is a third plausible approach, which seems like it ought to be called interpretive pragmatics, though I'm sure that would be an unwise name to give it. It says basically that the fault is not in our stars, dear Brutus, but in ourselves. This approach, which is consistent with every name-brand syntactic theory that I know of, whether the major portion of their expressive power is in transformation rules, surface filters, or phrase structure rules, is to keep the pragmatics strictly out of the syntax, and describe pragmatic control, constraints, and motivations within a general theory of communication. Thus syntactic forms would be generated freely, according to the syntactic rules of the language, without regard to their possible uses. Description of pragmatic restrictions on the use of such forms would be provided by theory of communication which would integrate such more or less universal principles as Grice's Cooperative Principle and its corollaries, strategies for referring, asserting, focussing, etc., as well as culture-specific rules of politeness and conventions of usage (Morgan 1978), all of which freely make direct reference to language users' intentions and beliefs. For example, the convention governing the use of the Sluicing construction might be something like (23).

- (23) Use of the Sluicing construction implies that the user believes that the individual implied to want to know the answer to the question corresponding to the sluiced construction is in fact ignorant of the answer.

This treatment, in contrast to the others, does not claim that sentences like (5) or (7) are ungrammatical. Rather, it predicts 1) that the use of such sentences will cause hearers to make certain inferences about the speaker, 2) that some of these may result in the sentence being considered perhaps inappropriate, given what else the hearer knows about the speaker and the subject matter, or contradictory, or ineffective for the purpose the hearer presumes to be intended by the speaker, or to use a technical term I introduced a couple of years ago (Green 1976), dumb, and 3) that the speaker is aware (at some level) of (1) and (2).

Thus, while the approach of the '60s entailed claiming that a sentence like (5b) was ungrammatical because the SAI rule for questions had applied in the complement of a verb bearing the syntactic feature [-SAI in Complement], and the approach of the '70s entailed claiming such a sentence was ungrammatical because the application of SAI in the complement, implying that the speaker believes that the referent of the subject of the embedding verb didn't know whether the questioned proposition was true, contradicts the assertion of the whole sentence, that the referent of the subject has figured it out, and thus does know. What I am proposing entails claiming that

sentences like (5b) are perfectly grammatical--they conform in every respect to the rules of syntactic combination comprising the grammar, but, nonetheless, such sentences are inappropriate, communicatively ineffective, or dumb, for reasons which are essentially the same as those cited by the second approach in describing what was wrong with them.

The conventions of usage I am referring to are not something I had to invent so as to have a place to put the pragmatic restrictions on the use of various constructions. In fact, they were originally proposed (Morgan 1978) to give an adequate account of the grammaticized implicatures of whimperative requests like (24a) and the use-conditions for formulae like (24b).

(24a) Can you pass the salt.

(24b) God bless you.

They seem to be appropriate to describe register differences among lexical items and constructions as well--it is only an arbitrary convention that vulgar words are vulgar, while the corresponding technical terms are not, that Quotation Preposing as in (24c) is restricted to literary language, while inverted exclamations are strictly colloquial usage, as in (24d).

(24c) "Blah, blah, blah," said the speaker.

(24d) Is that ever silly!

Idioms would seem also to find a natural description as conventions of usage: kick the bucket is a slightly disrespectful way of saying what you mean when you use die literally. And in fact, when you get right down to it, describing even so-called literal meanings of individual words as conventions of usage has a certain attraction: cow is the name conventionally used for members of a certain species; run, cry, tease, and wash are conventional names for certain states, processes, and goal-directed activities--but that's another story.

An of course, whimperative requests and formulae like God bless you and goodbye are not the only sentence-level constructs which seem to deserve an account in terms of conventions of usage. In 1975, Arnold Zwicky compiled a list of over 700 "Funny Speech Act Examples", sentences like those in (25), which were ordinarily understood as conveying something quite different from what would be predicted from their "literal meaning" and ostensible illocutionary force (if any).

(25a) Eat your heart out, Paul Newman.

(25b) Talk about leaping to conclusions.

(25c) The hell it is.

(25d) Nyaah, nyaah, nyaah.

Most of these are not fixed expressions, but like (25a-c), open formulae, as indicated in (26).

(26a) Eat your heart out, NP.

(26b) Talk about VP-ing.

(26c) The hell NP V.

What they communicate is conventionally fixed, as are, occasionally, the set of possible exponents for the open slots. Thus, (26a) is used to convey that some evident fact or situation is enough to make the referent of the NP *jealous*, though this is not a function of the literal meaning of the component words, and phrases and any theorems derived from the Cooperative Principle.<sup>2</sup> And (26c) conveys that the speaker considers the proposition which is derived by completing "NP V" with its reconstructed complement to be false, preposterous, unlikely, offensive, or otherwise unacceptable, but the NP must always be an anaphoric pronoun, and the V apparently must be an auxiliary verb or say, as shown in (27).

(27a) The hell she/\*Shawn/\*IBM/\*SHE does.

(27b) The hell she says/\*things/\*promises/does/will.

Here I anticipate the objection that if such diverse phenomena as idiomatic meanings of expressions, register restrictions, appropriate uses of social formulae, pragmatic restrictions on the use of syntactic constructions, and maybe even so-called literal meanings of lexical items themselves, are to be accounted for by a single descriptive mechanism, as conventions of usage, then why not syntax too? No principle prevents one from claiming that the rules of syntax and morphology (e.g. phrase-structure rules, verb-agreement rules) are just conventions of usage too. Under such a proposal, there would be no grammatical/ungrammatical distinction; what is wrong with a sentence like (28) is that cultural conventions about the use of am ensure that it could never be uttered sincerely by a rational speaker fluent in English.

(28) John am sick.

The objection strikes me as rather flimsy, because I think what one would want to say about am is that it is a linguistic convention, an arbitrary fact about the English language, that verbs agree in person and number with their subjects, and that /æm/ is the first person singular form of be, not that there is some arbitrary rule of the culture of English speakers that says that am is used to express the existential predicate in the present when the subject is a pronominal expression referring to the speaker.

In addition, treating syntax as just more conventions of usage denies the difference that Morgan claims exists between conventions of language and conventions about language, and seems to me to gain generality only at the cost of losing the distinction between unmotivated and absolute bizarreness ("ungrammaticality"), and explainable and conditional, situation-dependent bizarreness. Moreover, empirical study of language disorders supports the position that the distinction between grammatical well-formedness and (pragmatic) conventionality of usage is a valid and psychologically real one. Van Lancker and Canter (1979) summarize evidence from the clinical and experimental aphasiological literature which suggests that conventions about particular linguistic expressions "are represented by a different cerebral organization and are processed differently than are novel propositional expressions."

## IV. Implications

I have suggested that cases of so-called pragmatic control are really best treated as (pragmatic) conventions governing the using of syntactic constructions, letting the syntactic rules generate the constructions freely, without regard to pragmatic constraints. If the account I have suggested of pragmatic restrictions on syntactic combinations is indeed more adequate than previous accounts which either disguised pragmatic restrictions as formal syntactic restrictions, or enlarged the theory of grammar to include most of psychology and a good deal of logic, then it means that syntactic theory can go about its business as just a theory of syntax, as strict and simple and formal and mathematically manipulable as you like, and syntactic descriptions will not be cluttered up with psychological, anthropological, sociological, or statistical constraints. Such syntactic descriptions won't be very informative about language use, however--about the habits of usage and patterns of distribution among the people who speak a language; description of such matters will be the task of linguistics and grammarians who choose to describe the conventions of language use. This will be just as difficult a task as it ever was, but it needn't be stigmatized because it's not syntax. No one need feel embarrassed because the constraints on usage that they're describing aren't syntactic; they're rule-governed constraints on linguistic behavior, and every bit as linguistic as regressive assimilation or verb agreement.

And there is a good chance that if description of pragmatic conditions, and conventions of usage generally, comes out of the closet, and descriptions of usage are available, they could be a boon not only to teachers and writers of pedagogical and reference grammars for speakers of other languages, but in the teaching and practice of rhetoric, journalism, literary analysis, psychiatry, and any other fields or enterprises that depend on an accurate and insightful analysis of discourse.

## NOTES

\* This work was supported by the National Institute of Education under Contract No. US-NIE-C-400-76-0116.

<sup>1</sup> Admittedly, presupposition was still assumed in some circles to be a semantic relation (among linguistic or logical entities) rather than a pragmatic one, between speakers and utterances, so the problem did not appear in these circles to be so severe.

<sup>2</sup> The implied "meaning" of (26a) does, however, seem to follow as a conversational implicature of appearing to address such an order to an absent celebrity and taking the idiomatic meaning of eat one's heart out to be 'be jealous.'

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COMPETENCE FOR IMPLICIT TEXT ANALYSIS:  
LITERARY STYLE DISCRIMINATION IN FIVE-YEAR-OLDS

Georgia M. Green

A small-scale experiment is described in which kindergarteners demonstrated an ability to recognize the authorship of unfamiliar texts by authors whose other works they had been exposed to, apparently by attending to the linguistic and rhetorical characteristics that constitute literary style. A number of these characteristics are described and exemplified with citations from the texts used in the experiment. This implicit ability to analyze text with respect to a number of different linguistic and rhetorical properties has implications for the teaching of reading, and these are outlined in the final section.

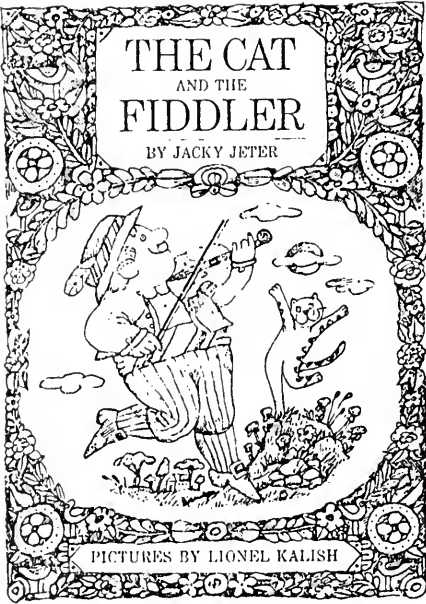
Why on earth would anyone imagine that five-year-olds could tell one literary style from another? I certainly wouldn't have if someone hadn't asked me if they could.

A couple of years ago, I remarked to someone that when my daughter Robin was 2 1/2, she claimed to recognize illustrations she had never seen before, claiming that we already had books we had just gotten. In fact, what we already had was books illustrated by the same artist, but the illustrations were of course not identical: what she recognized was the illustrator's artistic style. My interlocutor, who was a well-known expert in language acquisition, asked if Robin also thought she recognized stories she'd never heard before when they were by the same author as ones she had heard, if she recognized verbal style as easily as artistic style. My response was that not only did I not know if she had been able to do that at 2 1/2, I had no idea if she could do it at the time, when she was 4 1/2.

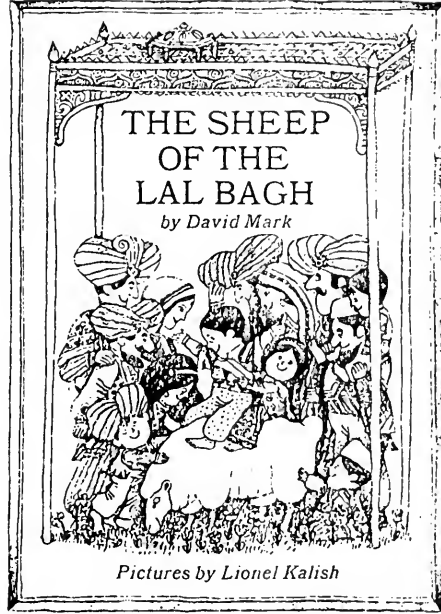
By the time I had figured out how to find out, I realized that it would be about as easy to investigate the abilities of a more representative population of children as it would be to explore the abilities of one child, and there would be a lot to be gained, for the question is of more than passing interest, and my interest in it was more than idle curiosity: if children at the age when reading instruction typically begins are sensitive to stylistic properties of texts, then this has far-ranging implications for their text-processing abilities, and these in turn have implications for diverse aspects of the practice of reading instruction. I'll return to these eventually.

So, the question was: given that one child, and I presumed many others, interpreted the similarities in the illustrations of artists like Lionel Kalish and Tom O'Sullivan, as shown in (1-2), as identities of a sort at age 2 1/2, could children recognize similarities in verbal (or literary) style as indicating identity of authorship.

(1a)



(1b)



(2a)



(2b)



I arranged to carry out a small-scale experiment, with the aid of a research assistant, Margaret Laff, in the kindergarten class of a day-care center in a midwestern university community of 95,000. The participants were five girls and eight boys, ranging in age from 5.0 to 6.1 years. These children had not begun formal reading instruction, although two of them could read unfamiliar texts with some facility.

At our request, the regular classroom teacher read ten books to the class at times normal for such an activity and in the way she normally would read to the children, showing the illustrations and answering questions. It took fourteen days for the books, two by each of five authors, to be read once. The ten books, read in the order in which they are listed, are indicated in (3).

(3) Exposure Books

1. Dr. Seuss: The Lorax. New York: Random House, 1971.
2. Margaret Wise Brown: Wait Till the Moon is Full. New York: Harper & Row, 1948
3. Bill Peet: The Ant and the Elephant. Boston: Houghton Mifflin, 1972.
4. Virginia Kahl: The Habits of Rabbits. New York: Charles Scribner's Sons, 1957
5. Beatrix Potter: The Tale of Mr. Jeremy Fisher. New York: Warne, 1906.
6. Dr. Seuss: Happy Birthday to You. New York: Random House, 1959.
7. Margaret Wise Brown: The Runaway Bunny. New York: Harper & Row, 1942.
8. Bill Peet: Big Bad Bruce. Boston: Houghton Mifflin, 1977.
9. Virginia Kahl: The Baron's Booty. New York: Charles Scribner's Sons, 1963.
10. Beatrix Potter: The Tale of Peter Rabbit. New York:

Shortly after the last book was read to the group, we prepared the group for the task of indicating their identification of new stories with an activity where they indicated whether they recognized which book an illustration was from. Five-page booklets were distributed to the children. On each page of the booklets five pictures had been photocopied in black and white. Each picture represented a major character from a book by a different one of the five authors mentioned above. In every case the character came from one of the books read to the children in class, and with only one exception, the character's name occurred in the title of the book. The same five pictures appeared on each page but they were arranged in different orders. For each page, the children were asked to put a crayon mark on "the picture that looks like it was drawn by the person who drew the pictures in (title) and (title)": the two titles by each author were cited in turn. This was an unusual task for the children and a few seemed puzzled by it. Though most seemed to know the correct answers, some may have been distracted by wondering why we would ask something so obvious. We also observed in at least one case that a child would point to the correct answer, but for some reason could not be persuaded to mark it. The children got from 2-5 correct as indicated in (4); nine got 3 or more correct.

## (4) Illustrations Task Results

Number correct	2	3	4	5	Total
Number of children	4	5	1	3	13

Then, five tape recordings of other stories by the same authors were played individually to each child. The stories on the tapes are indicated in (5).

## (5) Test Books

1. Dr. Seuss: I Had Trouble in Getting to Solla Sollew. New York: Random House, 1965
2. Beatrix Potter: The Tale of Two Bad Mice. New York: Warne, 1904
3. Bill Peet: Eli. Boston: Houghton Mifflin, 1978.
4. Margaret Wise Brown: Fox Eyes. New York: Pantheon Books, 1951.
5. Margaret Wise Brown: The Little Fur Family. New York: Harper & Row, 1946.

Each child heard the tapes in a different order. Some children heard one story by each author; some heard two stories by one author and one by each of three others. Thus, not all the children heard all the authors. This was intended to serve as a check on guessing strategies. Unfortunately, one third of the children in the second condition did not complete the task, so we did not draw any conclusions about guessing strategies.

Before each story, the children were told that at the end of the story they would be asked to think about which of the books read by teacher the new story most reminded them of. The children were also told that when the story was over, they would be asked to make a mark on a picture in a booklet similar or identical to one used in the illustration identification task.<sup>1</sup> Not all booklets were identical: the children who heard two stories by the same author had five 4-item pages, while those who heard one story by each author had five 5-item pages.

When each story was over, the interviewer read these instructions to the child:

If you think this story was written by Beatrix Potter, who wrote the stories about Peter Rabbit and Jeremy Fisher, put a mark on the picture of Peter Rabbit.

If you think the story you just heard was written by Virginia Kahl, who wrote the stories about Gunhilde and the rabbits, put a mark on the picture of Gunhilde.

If you think that the story was written by Margaret Wise Brown, who wrote the stories about the runaway bunny and the raccoon who wanted to go out at night, put a mark on the little raccoon's picture.

If you think the story was written by Dr. Seuss, who wrote the stories about the Lorax and the Birthday Bird, put a mark on the picture of the Lorax.

(5-item group only) If you think the story was written by Bill Peet, who wrote the stories about Big Bad Bruce and the ant and the elephant, put a mark on the picture of the bear.

After the child had marked a choice, the interviewer asked the child three questions:

- 1) Have you ever heard this story before?
- 2) How did you know it was that one?
- 3) Tell me something about the story that made you know who wrote it.

We did not expect to get much in the way of revealing or even true answers to such questions (5-year-olds have been observed to have no qualms about making up answers to such questions out of whole cloth), but we were prepared to consider anything indicating awareness of any stylistic property to be significant.

Responses fell into one of three categories. Many were either "off the wall" or simply uninformative. For example, in response to question 2, How did you know it was that one?, we got such responses as:

Well my dad told me.

I just knew. I was just thinking in my head. I remembered in my mind who it was always written by.

Some of these children had correctly matched the author. Some had matched incorrectly. A good number of responses, however, seemed to indicate at least a vague awareness of style. For instance, in response to the same question, How did you know it was that one?, children who had correctly identified the authorship of the story said things like:

Because . . . uh . . . because they were talking the same.

Um, because of how they were talking.

Well, it sounds like she's the one (pause) that was talking. It really sounds like the Lorax girl. See, in little parts of it it sounded like she was talking. And she was talking in the Lorax, I think, because she sounds the same as the Lorax girl.

And a few comments showed that at least one child was conscious of certain determinants of style. For example, responding to the same question, this child said:

Because I heard the story of Big Bad Bruce and they said something about the s . . . nort, and they said it too.

Most of the children, predictably, did not have the concentration to perform the entire task at a single sitting (about 55 minutes), and did one or two stories at a time. Three or four children did have the concentration to do this, however, (two of these were readers) and several were so intrigued with the task of guessing the authorship that they interrupted the tape to tell us the author (usually correctly) and preferred, contrary to our expectations, to go on to the next tape, rather than hear the end of the story.

This part of the experiment was not conducted under the best of circumstances: The tapes were unfortunately excessively "noisy," and the listening accommodations were not particularly comfortable--usually the floor of a small room that was not in use.

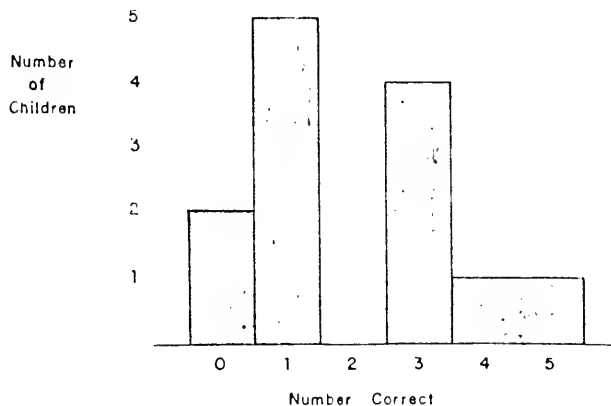
Children were allowed to discontinue the experiment at any time if they did not wish to go on. Three children did not complete the task. One listened to 4 out of 5 stories, one to 3 out of 5, one to 2 out of 5.

Thus the experiment was performed under a number of conditions that could be expected to bias the results against the hypothesis that children can identify stylistic traits of texts well enough to match the authorship of novel texts to texts they have already heard:

- 1) Children were exposed to only two exemplars by each author prior to the testing.
- 2) Children were exposed to each exemplar only once.
- 3) Exposure stretched over 14 days. The two books by each author were read for the most part 7 days apart.
- 4) The testing task was lengthy.
- 5) The testing was conducted under uncomfortable and distracting conditions.

Nonetheless, when they listened to tapes of a third work by each of the five authors, six of the thirteen children who participated in the interviews were able to correctly identify the authorship of three or more of the five stories, as indicated in (6).

#### (6) Style Test Results



The probability of randomly choosing the correct item out of five is 0.2. The probability of doing this three or more times in five trials is around 0.06. This means that six children performed at a level of accuracy

highly unlikely to be attributable to chance. The other four who completed the interviews performed with far below chance accuracy. In other words, a large percentage of the children performed in such a fashion as to imply that their comprehension of stories was not limited to vague outlines of plot and characterization, but extended to appreciation of the subtler rhetorical and linguistic aspects of style. Apparently the other part of the group either (a) misunderstood the task, (b) did not attend to the discriminants of style, or (c) fixed upon arbitrary guessing strategies.

### Correlations

There was no apparent correlation of the percentage correct with the participants' age or sex as shown in (7).

#### (7) Comparison of Number of Correct Responses with Age and with Sex

##### Average Age of:

Total Group	64.3 months
3-5 Correct Group	64.8 months
0-1 Correct Group	63.8 months

##### Percentage of Girls in:

Total Group	.38 (5/13)
3-5 Correct Group	.33 (2/6)
0-1 Correct	.43 (3/7)

Furthermore, there was no direct correlation between the children's ability to do well on the illustration pretest and their ability to perform the style recognition task. This indicates that performance on the style recognition task is not a simple function of intelligence or ability to follow directions. Specifically, of the 10 children who completed the style recognition task, the three children who did best on the illustration recognition task (matched all 5 pictures correctly) got 0 or 1 correct on the style recognition task. The children who did poorest (2 correct) on the illustration task, with one exception, got 0 or 1 correct on the style recognition task. But the children who did moderately well on the illustration task (3-4 correct) got 3-5 correct on the style recognition task.

A possible explanation for this is that the group that got 100% correct on the illustration task were accustomed to attending much more to the illustrations in listening to stories than to rhetorical and linguistic properties of the text, and that most of the children in the group that did poorest on the illustration task simply were not accustomed to attending to either style or illustrations in listening to stories. But the reason that the children who did best on the style recognition task did only moderately well in recognizing illustrations may be that their concentration on the aspects of literary style that allowed them to recognize authorship precluded their paying more attention to the illustrations.

In the absence, however, of confirmatory observations of the individual children, it seems just as justifiable to attribute the gap between the 0-1

correct group and the 3-5 correct group to individual differences (e.g., sensitivity to language) or linguistic maturity. Another possibility is that the children in the 0-1 correct group simply had less prior experience with the authors whose style we chose to investigate. Logically, this would seem to be a significant variable only if in being read to before the experiment these children were made aware of the names of the authors of the relevant books. I have no idea whether this was true in the case of the children tested. I would guess that the practice of reading the title page is not widespread, but I know of no definitive investigations. Personally, I never used to read aloud even the titles of the books I read to my children, and as a consequence, they developed their own designations for books. (Thus, my daughter's name for The Cat Who Stamped His Feet ((2a), by Betty Ren Wright, Golden Press, 1974) was "the cat-in-the-attic book" and her name for The Sheep of the Lal Bagh ((1b), by David Mark, Parents Magazine Press, 1967) was "the Ramesh book.")

On the other hand, Cazden suggests (personal communication) that prior exposure to other books by the same authors, even when the author's name is not mentioned, might provide a child with a frame in which to assimilate and categorize stylistic properties of texts.

Before I go on to describe with more specificity the linguistic and rhetorical aspects of text that these children must have been attending to in order to make the correct judgments that they made, I will describe how we selected the materials for this task, because we took great pains to avoid using materials that would allow a participant to make correct answers based on text properties that we considered not particularly linguistic, such as similarities of subject matter, or familiarly named protagonists.

Selection of materials was not a matter to be taken lightly. We knew that children might use subject matter or characters' names to decide authorship. For example, in a similar forced-choice task, one child correctly chose "the author of the Babar books" as the author of an unfamiliar paragraph referring to an individual named Arthur, and "the author of Hi, Cat and Whistle for Willie" as the author of an unfamiliar paragraph referring to a dog named Willie. When questioned, she replied that she had made her judgements on the basis of the name Arthur and the name Willie, respectively. Thus, our materials had to meet all of the following criteria:

1. The author had to have a distinct style. If we were not able, intuitively, to identify an author's works as stylistically unique, we did not consider her or his works as candidates for inclusion in the study. This eliminated a number of celebrated children's authors, including Ezra Jack Keats and Robert McCloskey.
2. The author had to have written at least three books which were not all about the same unique subject matter. This ruled out, e.g., Jay Williams, among whose books we could find only one that was not about princesses or kings.
3. The author had to have written at least two books with nonoverlapping sets of characters. This, regrettably, ruled out many authors with strongly individual styles, for example, the de Brunhoffs, authors of the Babar books. We considered including such authors, and changing the characters' names so as not to "give away" the authorship. We rejected this strategy however, on the grounds that (a) the kinds of names an author



chooses are an aspect of style, and we did not want to compromise the integrity of the experiment by meddling with even one aspect of an author's style, and (b) if a child did know such an author's works well, it might be unfairly confusing to ask for judgment on a work that both is and isn't that author's.

4. We had to have access to at least three books by the author that shared a distinct style. This eliminated such stylistically interesting authors as Maurice Sendak and Rosemary Wells, since we couldn't find three books (on the shelf at the local library) that met our other criteria and shared the same style.

5. At least one of the books, and preferably all three, had to have a text which could present the story independently of the illustrations, so that (a) the familiarization stories could be equally well assimilated by children sitting farther from the teacher and by children clustered closely around her, and (b) the taped story would not be incomprehensible.

The testing had to be done with tapes of the books rather than exemplars, even exemplars that obliterated the author's name, in order to eliminate the possibility that the children might identify the authorship by identifying the illustrations, which in most cases here were done by the author. Also, we wanted to eliminate the graphics (type face, layout) as a possible source of identification, since we had observed that at least some two-year-olds can recognize these things and "read" the Crest, K-Mart, Sears, and Special K logos. (One two-year-old insisted for months that a certain supermarket was an ice cream store, despite regular correction. Eventually his mother noticed that the lettering on the store's sign was very similar to that used by the Baskin-Robbins chain, and made some headway in clearing up the confusion.) We figured that five-year-olds might also use such cues, and we wanted to eliminate them.

What we eventually ended up with was the following: two authors who wrote in rhymed couplets and used lots of long words: Dr. Seuss and Virginia Kahl; and three authors who wrote about anthropomorphized animals: Beatrix Potter, Margaret Wise Brown, and Bill Peet.

Finding five authors who met all of our criteria was very difficult. In the initial planning of the study, we feared that including Dr. Seuss might bias the experiment in favor of the hypothesis. However, the discovery of Virginia Kahl allowed us to include both authors in the study, as both write verse fantasy in similar meter. Samples are reproduced in (8) and (9).

- (8a) "Oh, help!" cried the Duchess. "Our children are gone!  
They're not in the castle--they're not on the lawn--  
They're not in the gardens. Are they down in the moat?"  
"If they are," said the Duke, "let us hope they can float."  
"They have vanished, they've all disappeared from our sight.  
Our dear little daughters give one such a fright.

(Virginia Kahl: The Baron's Booty)

- (8b) The message told what the men had seen:  
An enormous beast of yellowy-green  
With a sinuous neck and a small fierce head  
That had no hair but had horns instead.

(How Do You Hide a Monster?)

- (8c) And everyone cried, "There's been an error.  
That beast is never a cause for terror.  
He'd never harm us; he's kind and true.  
We must protect him; what shall we do?"  
At last they announced, after due reflection,  
"We'll send the men off in the wrong direction"  
(How Do You Hide a Monster?)
- (8d) They all ate their pancakes--the very last crumb;  
But when they had finished, they all remained dumb.  
Then said the Good Wife, "Now, why don't you praise me?  
Your manners are dreadful--you really amaze me.  
You know that my pancakes are fluffy and flavory,  
Tender and toothsome, incredibly savory--  
Served with a syrup so pure and delightful,  
That you've often swooned when you've bitten a biteful."  
(The Perfect Pancake)
- (9a) Down slupps the Whisper-ma-Phone to your ear  
and the old Once-ler's whispers are not very clear,  
since they have to come down through a snergelly hose,  
and it sounds as if he had smallish bees up his nose.  
(Dr. Seuss, The Lorax)
- (9b) But I'm also in charge of the brown Bar-ba-Loots  
Who played in the shade in their Bar-ba-loot suits  
and happily lived, eating Truffula fruits.  
NOW . . . Thanks to your hacking my trees to the ground,  
there's not enough Truffula fruit to go 'round.  
And my poor Bar-ba-Loots are all getting the crummies  
because they have gas, and no food in their tummies.  
(The Lorax)
- (9c) I was real happy and carefree and young  
and I lived in a place called the Valley of Vung  
And nothing, not anything, ever went wrong  
Until . . . well, one day I was walking along  
And I guess I got careless, I guess I got gawking  
At daisies and not looking where I was walking.  
(I Had Trouble in Getting to Solla Sollew)
- (9d) I dreamed I was sleeping in Solla Sollew  
On the banks of the beautiful River Wah-Hoo  
Where they never have troubles. At least very few.  
Then I woke up. And it just wasn't true.  
I was crashing downhill in a flubbulous flood  
With suds in my eyes and my mouth full of mud.  
(Solla Sollew)
- (9e) Our camel, he said, had a bad case of gleeks  
and should be flat in bed for at least twenty weeks.  
(Solla Sollew)

- (9f) I listened all night to the growls and the yowls  
And the chattering teeth of those mice and those owls.  
While the Midwinter Jicker howled horrible howls.  
I tossed and I flipped and I flopped and I flepped.  
It was quarter past five when I finally slept.

(Solla Sollew)

- (9g) We're marching to battle. We need you, my boy.  
We're about to attack. We're about to destroy  
The Perilous Poozer of Pamplemousse Pass!  
So, get into line! You're a Private, First Class.

(Solla Sollew)

- (9h) They smell like licorice! And cheese!  
Send forty Who-Bubs up the trees  
To snip with snippers! Nip with nippers!  
Clip and clop with clapping clippers!  
Nip and snip with clipping cloppers!  
Snip and snop with snipping snoppers!

(Happy Birthday to You)

Similarly, by choosing three animal story authors, we hoped to eliminate topic as a cue to authorship, and force the judgments to depend on subtler cues. Indicative samples of the three authors' texts are reproduced in (10-12).

- (10a) "If you are a gardener and find me," said the little bunny,  
"I will be a bird and fly away from you."  
"If you become a bird and fly away from me," said his mother,  
"I will be a tree that you come home to."

(Margaret Wise Brown: The Runaway Bunny)

- (10b) Once upon a time in the dark of the moon there was a little  
raccoon.

(Wait Till the Moon is Full)

- (10c) "Does everyone sleep at night?" asked the little raccoon.  
"No," said his mother, "not everyone."  
"Who doesn't?" asked the little raccoon.  
"All things that love the night," said his mother. "Wait  
till the moon is full."  
"Is the moon a rabbit?" asked the little raccoon.  
"No," said his mother. "The moon is a moon. A big round golden moon."  
"Will I see it soon?"  
"Wait," said his mother. "Wait till the moon is full."

(Wait Till the Moon is Full)

- (10d) There was a little fur family  
warm as toast  
smaller than most  
in little fur coats  
and they lived in a warm wooden tree.

(Little Fur Family)

- (10e) Then the little fox climbed an apple tree. Along the bark of the tree the eye of a tree toad closed suddenly. The fox coughed, "Whiskerchew!" And the tree toad knew that someone had seen him hiding there in plain sight against the bark of the tree. Some children who were supposed to be taking a nap in the afternoon weren't sleeping at all. "Whiskerchew!" the fox coughed. And the children knew that the fox knew that they were not sleeping. All this the fox noted, and he went on his way.

(Fox Eyes)

- (11a) Peter gave himself up for lost, and shed big tears; but his sobs were overheard by some friendly sparrows, who flew to him in great excitement, and implored him to exert himself.

(Beatrix Potter: The Tale of Peter Rabbit)

- (11b) I am sorry to say that Peter was not very well during the evening.

(Peter Rabbit)

- (11c) So that is the story of the two Bad Mice,--but they were not so very very naughty after all, because Tom Thumb paid for everything he broke.

(The Tale of Two Bad Mice)

- (11d) "What a mercy that was not a pike!" said Mr. Jeremy Fisher. "I have lost my rod and basket; but it does not much matter for I am sure I should never have dared to go fishing again!"

(The Tale of Mr. Jeremy Fisher)

- (11e) And instead of a nice dish of minnows--they had a roasted grasshopper with lady-bird sauce; which frogs consider a beautiful treat; but I think it must have been nasty!

(Jeremy Fisher)

- (12a) "Where in blazes did you come from?!!" she shrieked, giving the boulder a vicious kick.

(Bill Peet: Big Bad Bruce)

- (12b) Once upon a time there was a lion named Eli who lived in the faraway land of Kumbumbazango. He was a decrepit old cat with a scruffy mop of mane, and most of the thunder had gone out of his roar. Now, after many long years as a proud king of beasts the old lion had finally become as meek as a mouse.

(Eli)

- (12c) In one frantic leap, and with a wild swing of a paw, Eli caught the jackal with a clout to the snout that sent the little rascal yelping away with his tail between his legs.

(Eli)

- (12d) Raising his voice to a rumble to make sure all the birds could hear, the lion let them have it. "You good-for-nothing grubby old bone-pickers! You flea-bitten beggars! You ugly old coots! You give me the creeps! Skedaddle! Take off! Get a tree of your own! Leave me be!"

(Eli)

- (12e) "Wade out into that soup and scrunch down in the gunkazunk grass. The Zoobangas will never look for you there."

(Eli)

What might children have been picking up on to make the correct identifications that they made? Let us begin with the verse selections. At first, the similarities between Kahl and Seuss may seem more striking than the differences. Both write obvious fantasy with a strong 4-foot meter, mostly anapests. And both do not hesitate to use words likely to be unfamiliar to young children. But here the similarity ends. Seuss' unfamiliar words tend to be unfamiliar because they're invented (slupps, snergelly, gleeks, flubbulous, snop), whereas Kahl's are likely to be unfamiliar because they are drawn from the formal, academic register of language, to which few young children have been exposed, and hardly any have attended. Sometimes she uses basically academic or literary words in her verses (e.g., error; toothsome, swooned), but much of the unfamiliar word usage is just academic senses of words in common usage in children's books (e.g. reflection in the sense 'thought,' due in the sense 'sufficient,' true in the sense 'loyal,' dumb in the sense 'mute'). Although the plots are comparatively simple and predictable, the whole tone of Kahl's stories is old-fashioned and/or mock-academic, and this is reflected in the syntax as well, in such phrases as cause for terror, and after due reflection, and in the non-anaphoric use of the pronoun one to mean 'a person,' and the Germanic verb-second syntax of Then said the Good Wife.

In contrast, the tone of the Dr. Seuss stories is very intimate and conversational. This is reflected in the vocabulary, where we find such colloquial items as smallish, tummies, the crummies, real used to intensify an adjective, and the contraction go 'round. The conversational tone shows up just as strikingly in the syntax, in such locutions as the introductory well, the hedge I guess, and the get + present participle construction (got walking).

Then there are the Seuss trademarks--the made-up species (Bar-ba-Loots, Truffula, Who-Bubs), and the coined place names (Valley of Vung, River Wah-Hoo), and the novel compound nouns (Bar-ba-loot suits, Super-Axe-Hacker, Key-Slapping Slippard). Finally alliteration, assonance, and consonance, as in selections (9g-9i), are much more characteristic of Seuss' verse than of Kahl's.

There are differences in length (the Seuss stories are longer) and in plot construction: the Seuss stories involve more episodes, are less predictable, and generally involve a human protagonist in interaction with non-human species (or only non-human characters), whereas Kahl's stories involve almost exclusively human protagonists (the sole exception is a Loch Ness-type monster). However, I suspect that these global properties of the texts were less salient to the children than the more linguistic differences, and this feeling is supported by the fact that several children made judgments (usually correct) before they had heard one-tenth of a

story. Without hearing a longer selection, they couldn't easily have formed correct judgments about such global properties as length and plot construction.

Furthermore, when the children mentioned reasons for their choices, they were usually framed in terms like "it sounded like . . .," although one child, justifying an incorrect choice mentioned particular actions:

I think it's (by the author of) Peter Rabbit because they were planting things and stuff. They were planting carrots.

As it turned out, the Dr. Seuss story was identified correctly 7 out of 12 times; one Kahl story was identified correctly 4 out of 11 times, the other once in two trials. Among the six children who identified the authorship of three or more stories correctly, the Dr. Seuss story was misidentified only once (as being written by Kahl), and the Kahl story was misidentified twice.

What cues allowed the children to recognize stories as being written by Brown, Potter, and Peet? First of all, although all three begin their stories traditionally enough with Once upon a time or Once there was or There once was, there are striking differences in the register used to tell the stories. Peet's stories have a colloquial (scrunch, clout, snout), even earthy tone. He minces n words; his characters are scruffy, decrepit, crafty. They don't just say or cry or even shout things, they shriek and let them have it. And his characters, who tend to be rather bad-tempered, don't mince words either. Roxy comes as close to cursing in (12a) as you can in a picture book, and Eli sounds almost like a Marine drill instructor when he calls the vultures all those colorfully rude names in (12d).

On the other hand, Potter's stories, written in Edwardian England, sound like it. When Mr. Jeremy Fisher curses, it's "What a mercy that was not a pike!" Some of the vocabulary is very formal and literary (implored, exert). Many of the phrases strike the modern ear as old-fashioned or maiden-auntish, for example shed big tears, so very very naughty, it does not much matter, I should never have dared to.

The register of Brown's stories is that of bedtime storytelling. As in the Bank Street College's "Here and Now" stories, for which Brown was a principal writer, these stories are almost exclusively dialog, with a little bit of narration and description, and the description is exclusively literal. In this way, her comparatively plain prose contrasts with Peet's, which makes copious use of figurative language: Eli has a mop of mane, and the thunder had gone out of his roar. When the vultures urge Eli to wade into the swamp (12e), they call it soup. It also contrasts with Potter's, in that Potter almost always interrupts her narrative at the end and makes her presence felt with comments like those in (11b, 11d, and 11e).

I do not mean, by saying that Brown's prose is plain, to imply that it is either colorless and boring, or lacking in style. It has a lyrical rhythmicity, clear in the refrain "Wait," said his mother. "Wait till the moon is full," as well as in the selections in (10b, 10d and 10e). And there is so much internal rhyme and half-rhyme (as in 10b, 10d, and 10e), that some of the passages almost seem to be in verse. Furthermore, Brown's prose has a cyclical structure that also mark it as unique, at least among this group of authors. This structural cyclicity shows up plainly in the conditional-counterconditional repartee (exemplified in 10a) that constitutes almost the

whole of The Runaway Bunny, and it is no less clear in the repeated requests in Wait Till the Moon is Full that are answered, every page or so, with the refrain "Wait," said his mother. "Wait till the Moon is full." as in (10c).

All of the Brown stories used in the experiment are quiet, calm stories, with no violence and a comparatively low level of suspense--what is going to happen is never a matter of life and death.<sup>2</sup> In contrast to Brown's simple, almost plotless stories, Peet's and Potter's stories involve unpredictable chains of episodes, and in Peet's these involve embedded and conflicting plans. All of the stories by these three authors that the children heard have animals as the main protagonists, but Brown's are almost always presented as juvenile and "pedomorphized" while many of Potter's and all of Peet's are full-grown, though not grown-up--they act and react like children. At least one of the stories by each author also involved human beings, though always as minor characters.

The Potter book in the text (The Tale of Two Bad Mice) was correctly identified 4 times out of 11; the Brown books (Fox Eyes and Little Fur Family) 7 times out of 13, and one time out of 4, respectively; and the Peet book (Eli), two times out of 6. Among the six children who correctly identified the authorship of three or more books, Fox Eyes was correctly identified 5 out of 6 times, and Little Fur Family 1 time out of 2; The Tale of Two Bad Mice was correctly identified 4 times out of 6, and Eli, 2 times out of 4.

Let us turn for a moment to address the question of accounting for the errors that were made. What might have caused some of the confusions? We can identify a number of cross-author similarities that might account for some of the errors. Both Peet and Seuss use very colloquial vocabulary and syntax. And Peet, like Seuss, refers to obviously invented species and places (gunkazunk grass, Zoobangas, Kumbumbazango), though Seuss' are more often compounded of familiar morphemes than Peet's. Both Potter and Kahl use a fairly formal and literary vocabulary and syntax. Seuss as well as Potter intrudes into the narrative and makes the author's presence felt. Happy Birthday to You and The Lorax are specifically addressed to the reader, the former as an extended wish, the latter as a sort of reverie. I Had Trouble in Getting to Solla Sollew unsurprisingly is a first-person narrative. Both Kahl and Brown tell simple stories, with relatively predictable plots, though Kahl's are more complex, and some of Brown's have hardly any plot at all. Finally, while Potter's stories are not as lullaby-like as Brown's, the suspense is muted, the action damped, by the calm, matter-of-fact tone of the telling.

How well do these similarities account for the errors that were actually made? If the errors had been random and evenly distributed, half of them would have been in cells predicted by these similarities. In fact, 56% of the errors were in these cells (56.5% of the errors by the 0-2 correct group, and 55% of the errors by the 3-5 correct group). And four children made symmetrical errors, for example identifying the Potter story as by Kahl and vice versa, suggesting that the errors were not random, but were based on some perception of similarity.

### Implications

This study appears to show that at least some five-year-olds have the ability to appreciate and discriminate among the literary styles

available in books intended for young children. Indeed, several children found the challenge of testing this ability exhilarating.

I cannot show that what the children were attending to when they correctly identified the authorship of stories they had not heard before was in fact the linguistic and rhetorical aspects of literary style that I have indicated. (I couldn't prove that, even if the experiment had been conducted with well-read and highly articulate adults), but it seems a good bet. In any case, it means that the children understood a whole lot more than the bare outlines (or even dressed-out outlines) of plot. Making the correct judgments almost certainly entailed not only noticing and abstracting from very fine details of wordcraft, but also attending to and abstracting from global structural matters of form and content.

If it is true that five-year-olds generally, and by extension, six- and seven-year-olds, have the ability to make such fine discriminations, then it seems likely that they would be able to tell the difference between the prose in ordinary children's books of the sort I have been discussing, and the prose in their readers, a sample of which is given in (13).

(13) Rabbit said, "I can run. I can run fast. You can't run fast."

Turtle said, "Look Rabbit, See the Park. You and I will run. We'll run to the park."

Rabbit said, "I want to stop. I'll stop here. I can run, but Turtle can't. I can get to the park fast."

Turtle said, "I can't run fast. But I will not stop. Rabbit can't see me. I'll get to the park."

Such prose is edited to conform to readability formulae which impose strict limits on sentence length and vocabulary. Owing to the strict constraints imposed by the publishers of basal readers' on sentence length, vocabulary, and story length, these works end up being designed in such a way that they are devoid of most characteristics of individual style. If it is generally true that at the age when reading instruction begins, children attend to and appreciate stylistic differences, then it would seem to follow that expecting them to read such basal readers is, to say the least, inconsiderate. At best it is pointless; at worst it is counterproductive. It wastes valuable time that could be spent in more profitable ways and risks boring the children and conveying to them that there is nothing interesting to be learned in books, or even in school. Is it possible that Johnny doesn't learn to read because there is no thrill in being able to read texts like (13), which is from what is supposed to be a version of Aesop's fable about the hare and the tortoise?

The objection is likely to be raised that the fact that 5-year-olds can appreciate the differences between works by Beatrix Potter and Margaret Wise Brown does not mean that 7-year-olds could read the works of either author independently, that 7-year-olds have enough trouble reading the admittedly anemic prose in the basals. It is certainly true that there is no direct entailment from what 5-year-olds can comprehend orally to what 7-year-olds can independently read, but I think this study suggests that 7-year-olds might be able to read Margaret Wise



Brown and Beatrix Potter; the fact that some have trouble with second-grade basals might be due to stylistic properties of the basals that are introduced in the process of writing a graded reader. Work at the Center for the Study of Reading (Davison, Kantor, et al., 1980) has shown that many of the devices used in adapting a text to meet sentence-length, vocabulary, and passage-length requirements contribute to a marked decrease in the coherence and interest of the text. In addition, it is a basic principle of attention theory that perceptual activities which demand more mental processing tend to be favored over less demanding activities (Hardiman and Zernich, 1978). Successfully meeting a challenge is itself a source of pleasure and satisfaction. If some seven-year-olds have trouble with grade-level basal readers, it may be a problem of motivation; it may be that they would do better on more complex, more difficult, more challenging, more rewarding material.

If the ability to discriminate literary styles is general among primary-grade children, then it may be that by editing their readers to meet someone's preconceived notions of what is easy, we are depriving children of the satisfaction of meeting a challenge, and contributing to making learning to read an unpleasant experience.

#### NOTES

\*This paper was presented at the 32nd Georgetown University Roundtable on Languages and Linguistics, March 20, 1981.

<sup>1</sup>For testing kindergarteners' ability to recognize literary style, we considered a number of tasks. A simple recognition task, wherein a child would be asked if a passage had been heard before, was rejected as not directly tapping the abilities we wanted to test. A 2 x 2 forced-choice task (matching unfamiliar (or familiar) passages with familiar authors' names two at a time) was rejected as not very informative, since making one incorrect answer practically entailed making another, and vice versa, one correct answer practically entailed making another correct answer. A 2-out-of-3 (or more) matching task, where a child would be asked to say which two passages out of a group were by the same author, was rejected as logistically unfeasible for nonreaders: The passages would have to be presented orally, and we judged that it would be asking too much to ask children to remember three or more passages and their order of presentation, in order to say which two were most alike.

We wanted to make the task as difficult as we could and still get better-than-chance performance so that it would test the limits of the children's ability and so that the results would be as informative as we could manage. For this reason, we settled on a 1-out-of-5 multiple choice style-matching task, with the test materials containing as few non-style-related clues as possible.

<sup>2</sup>Brown did not limit herself to "lullaby" stories. A bizarre and aggressive picture-book called The Steamroller: A Fantasy (Walker Publishing Company, 1974) shows an entirely different side of her.

<sup>3</sup>In response to perceived demands from text book selections bodies.

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EPENTHESIS AND ELISION IN METRICAL PHONOLOGY

Chin-W. Kim

In metrical phonology (Halle and Vergnaud 1978; Clements and Keyser 1980), the syllable structure has been proposed as having the role of monitoring the well-formedness of the phonological string. Thus, when the syllable template uncovers a "standard" consonant, a minimal syllable structure is assigned to it, and a vowel is inserted under the empty node. For example, if the permissible syllable structures in a language are CV and CVC, a string CCVCC would leave the first and final Cs stranded, i.e.,



and a vowel would be inserted under the empty nodes to construct minimal syllables. Three problems relating to this will be discussed.

1. On what principle is the syllable template assigned? Given permissible syllable structures of CV, VC, and CVC, is a string of CC assigned the template  $C \wedge C$ ,  $\wedge C \wedge C$ , or  $C \wedge V C$ ?

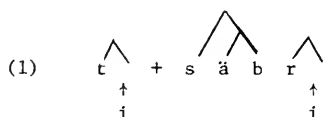
2. Can a phonological rule violating the syllable structure be allowed to apply, only to apply another rule whose sole function is to repair the damage done by the previous rule? (e.g. in Klamath, a vowel is elided to yield an ill-formed syllable structure. An adjacent glide is then "vocalized" to rectify it.)

3. An impermissible C cluster can be resolved either by a vowel epenthesis or by a cluster simplification (i.e. a C elision). Is there a principle that governs this choice?

Recent work in metrical phonology has stressed the importance of syllabic structure in the application of certain segmental rules as well as in the assignment of stress. In particular it has been argued that the syllable structure plays a role in monitoring the well-formedness of phonological strings. Thus, when during the construction of a metrical tree, a string is uncovered which does not conform to a language-specific canonical syllable structure, certain rules apply to restore a canonical form.

The earliest exemplification of this role of metrical phonology was given by Halle and Vergnaud 1978. Citing data from Kenstowicz 1977 (see also Kenstowicz and Kisseberth 1979: 224), they argued that the phenomenon of vowel epenthesis in Harari, a Semitic language in Ethiopia, can be handled in a predictable manner by appealing to a mapping procedure between the nodes in the metrical tree and the segments dominated by the nodes.

For example, the underlying string /t+säbr/ 'to break' (2 masc. Imp.) is phonetically realized as [tisäbrɪ]. The epenthetic vowel [ɪ] is inserted just where an empty slot occurs when the segments in the string are assigned the permissible syllable structures in the language, i.e., CV and CVC, as shown below



There is something intuitively appealing and elegantly simple about this treatment of vowel epenthesis. Yet there are some indeterminate procedural problems in the handling of epenthesis in this way, and this paper<sup>1</sup> is addressed to these problems.

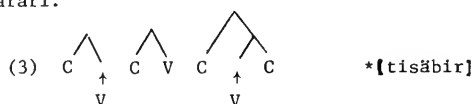
The question is this. Given a string of segments, on what principle(s) are the syllable trees built or syllable templates assigned? Are they built from left to right or in the opposite direction? When a given string is amenable to more than one way of syllabification (template assignment), what governs the choice of one structure over another? For example, given permissible (canonical) syllable structures of CV, VC, and CVC in a language, how is the impermissible consonant cluster CC to be resolved? By way of a vowel epenthesis or a consonant elision? If by epenthesis, is a vowel

epenthesized between the two C's as in C  $\begin{array}{c} \diagup \\ \diagdown \end{array}$  C, or to the left of each C as in  $\begin{array}{c} \diagup \\ \diagdown \end{array}$  C  $\begin{array}{c} \diagup \\ \diagdown \end{array}$  C, or to the right of each C as in C  $\begin{array}{c} \diagup \\ \diagdown \end{array}$  C  $\begin{array}{c} \diagup \\ \diagdown \end{array}$  C? And if by a consonant elision, which one deletes and which one survives? Again what principle governs the choice?

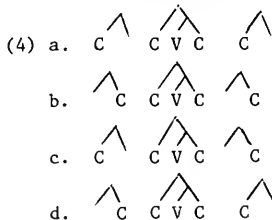
A pair of principles guiding the syllable-tree building emerge from the literature. They are:

- (2) a. Assign a MAXIMAL syllable structure<sup>2</sup>, if possible, to the string from the beginning of the utterance (i.e., from left to right); and
- b. If any segment is still left stranded, assign a MINIMAL structure to it.<sup>3</sup>

Thus, returning to the Harari example, the string CCVCC (t+säbr) is assigned the template shown in (1) where the middle maximal structure is flanked by a minimal structure on both sides. Note that if one has the option of building a minimal structure on the existing segments and a maximal structure on stranded segments, one can have the following result, which is unacceptable in Harari.

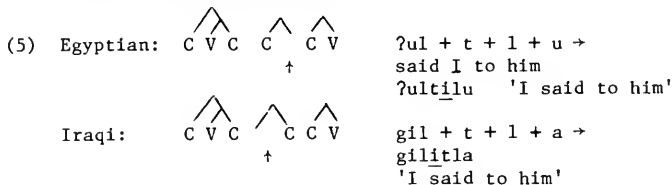


There are situations, however, in which these principles (which I will call "Maximum" and "Minimum") do not give an unambiguous resolution. To see this, suppose that a language allows VC as well as CV and CVC. Then, given CCVCC, the stranded initial and final consonants can be resolved in several ways as shown in (4).

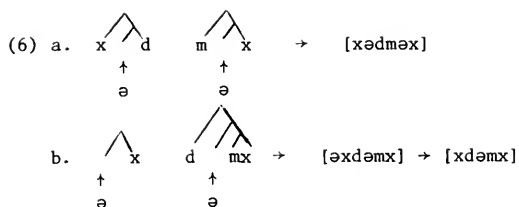


On what basis do we choose one over the other? Here, one may take either a universal approach or a language-specific approach. Clements and Keyser 1980 appear to take the latter approach when they say that a theory of the syllable in a given language contains, in addition to a schema defining the set of possible syllables, what they call "rules of disambiguation" which select one syllable structure for a given phonetic string whenever the schema permits more than one syllabification of such a string. On the other hand, one can plausibly entertain taking the first path. One can for instance invoke Kiparsky's (1980) notion of Universal Syllabic Template and say that, according to this universal template, resolving of a stranded consonant to CV rather than to VC, or CC to CVC rather than to VCC or CCV, is to be preferred. This universal approach at least fits the observed Harari data.

Other available data indicate, however, that options for different syllabifications for different languages and/or dialects should be permitted. Broselow 1980 for example describes a difference between Egyptian Arabic and Iraqi Arabic in terms of the way a word-medial tri-consonant cluster is resolved. In Egyptian Arabic, the vowel *i* is epenthesized to the right of the middle stranded consonant, while in Iraqi Arabic, *i* is epenthesized to the left of the stranded consonant, as shown below:



Halle and Vergnaud 1978 also cite two dialects of Berber differing in a similar way. For example, in order to account for two different pronunciations of the underlying form xdmx 'I worked' in two dialects (styles?) of Berber, they posit two different syllabifications of the string as shown in (6):<sup>4</sup>



The nature of the epenthetic vowel (i vs. ə) is undoubtedly language-specific, but it is not clear that we can say the same with regard to the position of epenthesis. The lack of canonical syllabic structure VC in Harari apparently dictates the right-handed epenthesis of a vowel, but Berber has both CV and VC, and considering the fact that CV is a universally less marked syllable paradigm than VC, it is not easy to explain the left-handed epenthesis of a vowel in Berber.<sup>5</sup>

Instead of talking about the right- or left-handed epenthesis, one might look on this as interpreting the "stranded" consonant as a part of the onset or the rhyme of a "degenerate" syllable with a null nucleus. Selkirk 1980, also noting this problem, calls the right-handed epenthesis the onset analysis, since the consonant becomes the onset of the resulting syllable, and the left-handed epenthesis the rime analysis, since the stranded consonant becomes a part of the rime in this case. She then goes on to say:

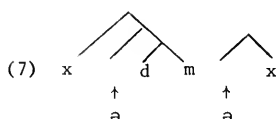
"The answer is less easy to come by when we compare the forms with the C\_\_\_ (=onset) and \_\_\_C (=rime) analysis. In all cases, either one would in principle have been possible. I do not in fact have a satisfactory answer to the question here. Following Aoun 1979, I will assume that, in the unmarked case, it is the rime analysis of a lone C that is chosen -- this because the rime rather than the onset is the essential element of the syllable. We could assume that, by universal principle, a lone C is given the rime analysis." (Selkirk 1980:14)

The marked case of the onset analysis (i.e., the right-handed epenthesis) is derived by a rule of what Selkirk calls "Onset switch".

I am not sure that I agree with the Selkirk's statement that the rime analysis is unmarked because the rime rather than the onset is the essential element of the syllable. I should think that CV is a less marked syllable shape than VC. In the Universal Syllabic Template, the first bifurcation is into onset and rime, a further bifurcation of rime into nucleus and coda being secondary, and Kiparsky 1979 has given a metrical account of why VCV should be syllabified as V.CV not as VC.V, and why it is more natural for iu to become yu (CV) rather than iw (VC), etc.

The Berber example raises another problem. Recall that we earlier adopted the "Maximum" and "Minimum" principles and the left-to-right direction for assigning the syllable structures on a phonological string. If

we follow these principles, the syllable tree for the Berber example should not be as given in (6) but as given in (7) below.

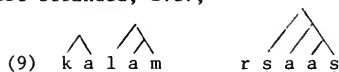


Given the fact that in Berber the maximal syllable structure is CVCC, that the minimal syllable involving a single consonant is CV or VC, that a vowel is epenthesized to the left of the stranded consonant, thus favoring VC over CV, and that the syllable structures are assigned to the string from left to right, neither tree in (6) is derivable. (6a) happens to be phonetically identical with (7), but (6b) is derivable only if the syllable structure assignment proceeds from right to left. In view of the fact that in most languages stress assignment is sensitive to syllable structures starting from the end of a word, the right-to-left direction of syllable template assignment is altogether reasonable. It also implies that in a language whose stress assignment counts syllables from the beginning of a word, the syllable trees should also be built from left to right.

Epenthesis in Palestinian Arabic is particularly instructive in that not only both left and right epenthesis may be found in the same language but also even the "Minimum" principle does not appear to work. Examine the following data from Abu-Salim 1980 where the underlined i indicates the epenthetic vowel.

- (8) a. kalam i r̥saas̥                    'a pencil'  
 b. sam̥in baladi                    'home-made butter'

According to Abu-Salim, permissible syllable structures in Palestinian Arabic are CV, CVV, CVC, and CVVC. Now, if one assigns these syllable structures on the underlying form of (8a), the initial consonant of r̥saas̥ is left stranded, i.e.,



If a minimal syllable structure is assigned to this stranded consonant, one should get [kalam r̥i̯saas̥], for the minimum syllable structure in Palestinian Arabic is CV, and therefore a syllable tree  $r̥ \hat{\phi}$  must be built on the stranded consonant r̥, epenthesizing a vowel to its right. But this is not an acceptable form. The acceptable form given in (8a) suggests that the vowel must be epenthesized to the left of the stranded consonant, i.e., is interpreted as part of rhyme. This means that the minimum structure to be built on the stranded consonant is  $\hat{\phi} C$ , not  $C \hat{\phi}$ . But this is not possible, for Palestinian Arabic does not have a syllabic structure VC. One might argue that in this case a vowel was epenthesized to the left of the stranded consonant so that the epenthetic vowel comes between the two compound elements, i.e., at the compound boundary, thus

preserving the unity of compound elements. This argument however does not work, for the forms like (8b) show that the vowel is epenthesized to the left of the stranded consonant regardless of the position of the compound boundary. The following example, again from Abu-Salim 1980, shows that the same word behaves in a parallel way.

- (10) a. ?akl i ktiir 'a lot of food'  
 b. ?akil řarabi 'Arabic food'

The form given in (10a) presents yet another problem. When the syllabic templates are assigned to the underlying form of (10a), two consonants, the final consonant of ?akl and the initial consonant of ktiir, are left stranded, as shown in (11):

- (11) ? a k l k t i i r
- 

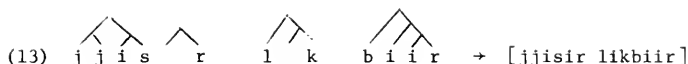
Assigning a minimal syllable structure to these stranded consonants and epenthesizing vowel i to the empty nodes to the left of the stranded consonants (despite the problem just mentioned), one should get [?akili ktiir]. But this is incorrect on account of the presence of the first epenthetic vowel. Although it is possible to argue that both vowels are epenthesized and that the superfluous vowel is deleted by a syncope rule that deletes unstressed high vowels in non-final open syllables (cf. Kenstowicz 1980), a simpler alternative is to say that the two stranded consonants form a permissible syllable CVC by inserting a vowel between them. That is, what is assigned is not a minimal syllable structure on each and every successive stranded consonant, but rather a minimal syllable structure incorporating as many of the stranded consonants as possible, so long as this syllable satisfies the canons of the language. A single consonant still left stranded would be assigned a minimal syllable structure on that consonant.

There is some evidence that this approach, rather than a solution via a syncope rule, is correct. This evidence emerges when one examines a case that contains at least three stranded consonants in succession, for example, /jjisr l-kbiir/ 'the big bridge'. Assignment of maximal and minimal syllable structures on this string yields

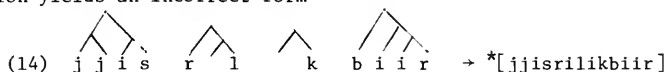
- (12) j j i s r l k b i i r
- 

Epenthesis of vowel i to the left of each stranded consonant gives [jjisir i likbiir]. Application of the syncope rule that deletes unstressed high vowels in non-final open syllables, i.e., when followed by CV, will delete all but the final epenthetic vowel, yielding the ill-formed \*[jjisr ilikbiir], the correct form being [jjisir ilikbiir]. The correct form can be derived if one assigns the minimal syllable structure on the stranded consonants incorporating as many of them as possible, as shown in (13).

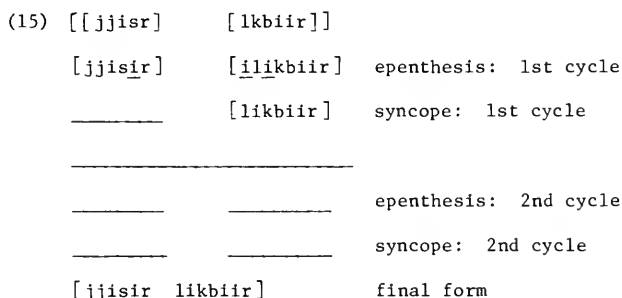




This incidentally shows that the syllabic template assignment should proceed from left to right, not from right to left, for the latter procession yields an incorrect form



One can still derive the correct form via a syncope rule by assuming that epenthesis and syncope rules are cyclic rules, applying at the word level first, then at the phrasal level:



But since the status of cyclic rules is so unstable, and since Abu-Salim 1980 rejects the cyclic approach on other grounds, I will not adopt it here either.<sup>6</sup>

The above discussion then calls for a revision in the "Minimum" principle:

- (16) Assign a minimal syllable structure on stranded consonants incorporating as many successive segments as possible.

A moment of reflection will show that this is a reasonable assumption. The purpose of vowel epenthesis is to make an unpronounceable string in a language pronounceable. In that role, an epenthetic vowel assumes an obscure and non-prominent profile as much as possible. For example, epenthetic vowels are normally the least resonant high vowels, they do not receive stress, etc. Minimizing the number of epenthetic vowels is another way of achieving this effect, for it distorts the underlying form as little as possible. Thus, given a succession of three stranded consonants, there is no reason to proliferate epenthetic vowels by inserting one to the side of each consonant. It is only natural that the sequence is resolved into a pronounceable form, i.e., one of canonical syllable structures, using the minimum number of epenthetic vowels. Thus, a succession of two stranded consonants should be resolved into CVC, if the language allows such a syllable structure, not necessarily into CVCV or VCVC.

The revised principle of syllable template assignment given in (16) does not however explain why the forms given in (8b) and (10b) should appear as they do, not as \*[samni baladi], \*[ʔakli ʕarabi], etc., despite the fact that the minimal syllable in Palestinian Arabic is CV, not VC. Thus, there is nothing that can reject the ill-formed strings in which a vowel is epenthesized to the right of the stranded consonant, for the resulting syllable structure CVC.CV (followed by CV.CV.CV) perfectly conforms to the canonical syllable shapes. What might explain this phenomenon is that the language prefers, in disyllabic forms, the CV.CVC to CVC.CV sequence of CV's.

I now turn to a brief discussion of a related phenomenon. Recall that an impermissible consonant cluster can also be resolved by way of a consonant elision, instead of by way of a vowel epenthesis. Korean provides a good example of such a language. Like many languages, Korean does not permit consonant clusters word-initially and finally, and three-consonant clusters word-medially. Thus, a word-final cluster is reduced to a single consonant, and a word-medial tri-consonant cluster is reduced to a cluster of two consonants. For example,

- (17) /kaps/ 'price', kaps-i 'the price is', but kap#, kap-to 'price also'  
 /næks/ 'soul', næks-i 'the soul is', but næk#, næk-to 'soul also'  
 /cælm/ 'young', cælm-ɪm 'youth', but cæm-ta 'be young'  
 /anc/ 'sit', anc-əra 'sit down.', but an-ko 'sit and'  
 /ilk/ 'read', ilk-əra 'read!', but ik-ca 'let's read'  
 /yətəlp/ 'eight', yətəlp-iro 'with eight', but yətəl#  
 /halth/ 'lick', halth-əra 'lick!', but hat-ko 'lick and'  
 /ɪlp/ 'recite', ɪlp-əra 'recite!', but ɪp-ca 'let's recite'

One might ask if there are any intrinsic or extrinsic reasons as to why Korean resorts to consonant ellipsis rather than to vowel epenthesis in order to resolve impermissible consonant clusters. But there doesn't seem to be any principled reason for it. That is to say, the choice of vowel epenthesis or consonant ellipsis appears to be an entirely language-specific matter. However, even this much generalization seems to be too strong, for vowel epenthesis is also found in Korean, notably in nativizing loan-words, i.e., in resolving impermissible consonant clusters in borrowed words, for example,

- (18) golf → k'olp<sup>h</sup>u  
 dance → t'ansɿ  
 strike → sɿt<sup>h</sup>ɿraik<sup>h</sup>ɿ (in baseball)  
 trio → t<sup>h</sup>ɿrio  
 print → p<sup>h</sup>urinthɿ  
 Christmas → k<sup>h</sup>ɿrisɿmasɿ

Obviously, clusters are broken up with epenthetic vowels, rather than simplified, so that as much original pronunciation may be kept in the nativized pronunciation. This is especially clear in the last example. Since Korean allows word-medial consonant clusters and has the CVC syllabic structure, all that is needed in Christmas is an epenthetic vowel to break up the initial cluster to yield k<sup>h</sup>ɪrɪsmas as a loan-word pronunciation. But Korean does not allow the obstruent-nasal cluster nor a word-final s on the surface. The syllable-final or word-final s becomes an unreleased stop t̚, and obstruents preceding nasals are nasalized (cf. Kim 1976). Application of these rules to k<sup>h</sup>ɪrɪsmas would then render k<sup>h</sup>ɪrɪnmat, making it all but unrecognizable as standing for Christmas.

One might say that the Sonority Hierarchy given in (19) (Kiparsky 1979) below determines in a principled way at least some types of elision. Hankamer and Aissen 1974 have in fact reported that the rule of vowel contraction in Greek operated in terms of a sonority hierarchy in such a way that when two unlike vowels come to abut together, one of them deletes, and the survivor is the one which is higher on the ladder of the sonority hierarchy, which they define as a, o, u, e, i for Greek vowels.

- (19) Sonority Hierarchy (Kiparsky 1979: 432)
- |                                    |                   |
|------------------------------------|-------------------|
| High Sonority                      | Low Sonority      |
| a, e, o, i, u, y, w, r, l, nasals, | fricatives, stops |

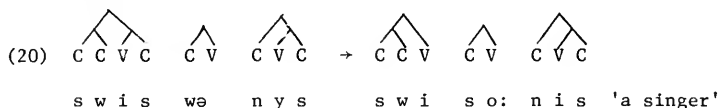
With a minor variation, the universal vowel hierarchy proposed by Kiparsky matches the Greek hierarchy. It is easy to be persuaded that it is natural for the less sonorous vowels to be deleted, for they are phonetically weaker in their acoustic output, and therefore less audible, everything being equal, and therefore should disappear first.

But the Korean data given in (17) shows exactly the opposite phenomenon. It is the less sonorous of the two consonants (the first two in the case of a word-medial tri-consonantal cluster) that survives, and the more sonorous deletes. (In Kim 1972, I called this the principle of close articulation in Korean, whereby the segment with narrower aperture survives. Degrees of aperture correspond closely to the sonority hierarchy, the maximum aperture entailing the maximum sonority, and the minimum aperture, the minimum sonority.)

What this implies is not only that the choice of vowel epenthesis and consonant elision is a language-dependent matter but also that the choice of segments to be deleted is a language-specific matter. It also implies that weak and strong labels of metrical nodes has little role to play here, because in Korean it is strong nodes that are deleted (if one labels more sonorous segment as strong and less sonorous as weak).<sup>8</sup>

It is not always easy to define the teleology of a phonological rule, although some rules, e.g., vowel epenthesis in Harari or loan-words in Korean, are easy enough to be identified as having solely the purpose and function of making a deviant phonological string conform to a canonical form. By definition, every phonological rule deleting or adding a segment (or vocalizing and devocalizing a segment) is a syllable modification rule.

But it is not clear that every one of such rules is only motivated to preserve or restore canonical syllable structures, as syllable-dependent phonology makes it appear to. In fact, many rules have the effect of violating and destroying the existing perfectly well-formed canonical structures, sometimes necessitating a subsequent rule to repair the damage. An example or two should illustrate this point. The following example is from Klamath (Clements and Keyser 1980):



Here, elision of vowel a from wə leaves w stranded, which is made to be re-affiliated with the preceding s after undergoing vocalization to o:. Another example is again from Palestinian Arabic (Kenstowicz 1980):

(21) /ti-ħrik-i/ 'burn' (2P, f., sg.)

ti-ħr\_k-i syncope

ti-ħirk-i epenthesis

Here, the root vowel i is elided by the syncope rule mentioned earlier, and then the resulting unacceptable cluster is resolved by epenthesizing vowel i between the first two root consonants.

The beauty of a metrical treatment of the phenomenon of epenthesis, as that of Harari by Halle and Vergnaud 1978, stems from the theory that a linear string of segments has a non-linear hierarchical structure, and that epenthesis or elision follows naturally and directly from the fact that the segments are under the control of this constituent hierarchy to such an extent that empty nodes must be filled and the excess nodes must be pruned, so that anomalous syllable structures are brought into line with optimal canonical syllable structures. If this is the case, then how is it possible that in the examples given in (20) and (21), a vowel elides from a perfectly well-formed syllable structure, even creating an ill-formed syllable structure in the process? The answer to this might be that vowel elision here is not a rule dependent on or associated with syllable structure but a rule independently motivated in the language. But this is an overstatement, for the syncope is clearly dependent on syllable structure: it applies only in open syllables. Rather, what this illustrates is, I think, the holistic, interconnecting, sometimes conflicting, and cross-purposeful nature of phonological processes emphasized by Stampe 1973, among others. So it is natural for a "weak" vowel to be dropped from a "weak" position, for example, in unstressed open syllables. But this can give rise to violations of syllable structure canons. In Palestinian Arabic, such a vowel is deleted and the resulting CCC is rectified by vowel epenthesis. On the other hand, in Egyptian Arabic, the rule of syncope is blocked if its application gives rise to CCC.

While one may speculate that in deriving such forms as given in (22) via vowel elision,

(22) ləgəmor → ləgmor 'to finish' (Biblical Hebrew. Borer 1979)

ʔip'eq'a → ʔip'q'a 'put some things on face' (Klamath. Clements and Keyser 1980)

eləkiləkəpən → elkilkəpən 'he was big' (Passamaquoddy. Stowell 1979)

the motivation is to reduce the number of syllables by resyllabifying an existing string consisting of minimal syllables into one of maximal syllable structures, i.e., CV.CV.CV(C) into CVC.CV(C), one may be able to find a more principled reason for it. In this attempt, I turn to a portion of a recent article by Halle and Vergnaud 1980.

In analyzing verb morphology of Arabic, they rearranged all the verb stem shapes into the following table consisting of what they called syllable skeleton which is the sequential arrangement of consonants and vowels in a word. (Dot notations in the table are mine.)

(23)	I	II	III
1.	CV.CVC	C.CV.CVC	
2.	CVC.CVC	C.CVC.CVC	CV.CVC.CVC
3.	CVV.CVC	C.CVV.CVC	CV.CVV.CVC

The following patterns are readily visible in this table:

(a) Rows are different from each other in the shape of the first syllable, the last syllable always being CVC.

(b) Column II is C+Column I, and Column III is CV+Column I, except that

(c) the expected skeleton for Row 1, Column III, i.e., CV.CV.CVC, does not occur. In Arabic, this expected skeleton becomes identical with the skeleton in Column I, Row 2, i.e., CVC.CVC, with elision of the middle vowel.

It is this last point (c) that I wish to dwell upon briefly. In order to explain this curious phenomenon, Halle and Vergnaud 1980 postulate the following rule (p. 94, their rule 8b)).

(24) Delete a penultimate nonbranching rime if preceded by a nonbranching rime.

A nonbranching rime means a single vowel. This rule says then that a single vowel in the penultimate syllable should be deleted when it follows a syllable whose nucleus is a single vowel.

This is a description, hardly an explanation, but it points to an important fact, that is, elision of a vowel will apply if the resulting skeleton conforms to an existing skeleton.

I believe that this is intimately related to an earlier discussion of Arabic examples (8b and 10B). We wondered then why in resolving an impermissible tri-consonantal cluster in the forms like samn baladi and ʔakl ʕarabi, a vowel was epenthesized to the left of the stranded middle consonant, despite the fact that the minimal syllable structure CV in the language required the minimal tree to be built on the stranded consonant to be  $C \wedge$  rather than  $\wedge C$ , and suggested that it is probably because the language preferred the sequence CVCVC to CVCCV in disyllabic words, that is, the preferred syllable skeleton is CVCVC.

When one combines this observation with the observation made earlier regarding a succession of two or more stranded consonants, it points to a conclusion that the domain of the mapping procedures for epenthesis and elision is not a single segment or a syllable but a sequence of CV's called a syllable skeleton.

I have examined in this paper the mapping procedures employed in the treatment of epenthesis and elision in the framework of metrical, syllable-based phonology. The following conclusions can be drawn from this examination.

(1) Assignment of syllable templates proceeds from right to left (at least in languages where, for the purpose of stress assignment, syllables are counted from the end of a word).

(2) Minimal syllable structures are built on stranded consonants incorporating as many successive segments as possible.

(3) Choice of vowel epenthesis or consonant elision seems to be a language-specific matter.

(4) The sonority hierarchy appears to play a minor role in determining the choice of elliptical segments.

(5) In some languages at least, the domain of vowel elision and epenthesis is a sequence of CV's called a syllable skeleton.

#### NOTES

<sup>1</sup>This is an expanded and revised version of the paper of the same title presented at the 55th Annual Meeting of the Linguistic Society of America, December 28-30, 1980, San Antonio, TX. I have benefited from the comments made by George N. Clements and John J. MacCarthy at the meeting, and from Michael Kenstowicz who read a draft version of this paper and gave me valuable comments. I thank them all, but any faulty arguments in the paper are mine.

<sup>2</sup>This principle is my inference. References to this procedure in the literature are rather vague, e.g.,

"When we attempt to syllabify the underlying representations..." (Halle and Vergnaud 1978:3)

"Syllabify according to (5)" (Borer 1979:152), where (5) refers to a simple list of syllable structures allowed in the language.

The only explicit statement is found in a parallel situation. Hayes (1980), for example, proposes a "maximal foot construction principle" by which maximal trees are to be built first when building foot trees on a string of syllables. "Foot construction rules construct the largest foot compatible with their conditions." (181). Cf. also: "A foot must universally be mapped onto as much of a word as possible... all feet must be maximal." (McCarthy 1980:80)

<sup>3</sup>Cf. "To obtain the correct output strings we postulate that minimal syllable structure is assigned to the segments circled" [=stranded]. (Halle and Vergnaud 1978:3).

"Assign minimal syllabic structure to every "stranded" consonant." (Borer 1979:152)

<sup>4</sup>In Berber, the following syllable structures are possible: V, VC, VCC, CV, CVC, CVCC. The final form of (5b) is derived by an additional rule of initial schwa deletion. The two different forms are attributed to Saib 1976 (5a) and Guerssel 1977 (5b).

<sup>5</sup>The two types of epenthesis may exist in the same language. Impermissible initial consonant clusters in loan-words in Persian are resolved in both ways, e.g., esmit 'Smith', kelas 'class'. Borer 1978:170 also notes that in Tiberian (Biblical) Hebrew, the initial consonant cluster is broken up by inserting a vowel to the right of the stranded consonant, while the final cluster is broken up by inserting a vowel to the left of the stranded consonant. Amharic is said to exhibit a similar phenomenon in that a schwa is inserted to the right of the stranded consonant in the environment of  $\widehat{V} \widehat{C} \widehat{C} \widehat{C} \widehat{V}$ , but to the left in the environment of  $\widehat{V} \widehat{C} \widehat{C}$ .

<sup>6</sup>Borer 1979 persuasively argued that cyclic application of syncope and epenthesis rules are necessary in Biblical Hebrew. Equally persuasively, J. McCarthy argued at the San Antonio meeting that the case of Biblical Hebrew could be handled without resorting to a cyclic mechanism.

<sup>7</sup>Note the following statements in this regard:

"We make the natural assumption that two adjacent stranded consonants form a CVC syllable." (Kenstowicz and Abdul-Karim 1980:72)

"As for the forms with C C, the answer is straightforward: no other analysis is available, which also minimizes the occurrence of dummy elements in the syllabification." (Selkirk 1980:14).

A similar point has been made by Abu-Salim (1980) who states:

"This means that epenthesis has to refer to the whole structure not only to the stranded consonant, to determine the position of the epenthetic vowel." (6)

<sup>8</sup> One case in which the node labeling was used in the operation of well-formedness conventions on syllable structure is compensatory lengthening. Ingria 1980, in particular, proposed what is called "Empty Node Convention" (471) by which empty weak nodes which are part of a syllabic coda are to be associated with the immediately preceding syllabic nucleus, while other empty nodes are to be pruned. This convention, however, is for the empty nodes created by deletion of segments by phonological rules, not for those created during the process of building syllable trees, and is not relevant to what we are discussing here. Furthermore, Clements 1980 demonstrated the inadequacy of the convention even in handling compensatory lengthening.

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DISPLACED TONES IN DIGO (PART 2)\*

Charles W. Kisseberth

In this paper the analysis of Digo tonology developed in Kisseberth and Wood (1980) is extended to include some additional verb tenses, the most common types of nouns, and phrases consisting of a verb plus a following noun. The analysis presented in Kisseberth and Wood (1980) is modified in several places, and evidence is developed in support of the hypothesis that some of the tone rules involved apply cyclically. The data from verb-noun phrases establish very clearly that, despite the considerable opacity of the Digo tone system, the rules are fully productive and the proposed set of underlying contrasts is highly motivated.

In Kisseberth and Wood (1980), henceforth K&W, a preliminary analysis was given of the tonal pattern of three verb tenses in Digo (E.73 in Guthrie's 1971 classification of Bantu languages). This analysis was based entirely on the tonal shapes of these verbal forms as they are pronounced in isolation (i.e. when no word precedes or follows them). The present paper considerably expands the data base for the analysis of Digo tonology; I include some additional verbal tenses, I analyze the most common types of nouns, and I consider phrases consisting of a verb plus a single noun.

Although my inclination at the present time is to provide an essentially accentual rather than a purely tonal analysis for Digo (cf. Goldsmith 1981), the present paper will follow the tonal treatment of Digo given in K&W, modifying this analysis in some places and expanding it in others. I have not sought to recast the analysis in an accentual framework since the essential points I wish to develop here can be brought out adequately within the general framework of K&W. The interested reader is referred to my forthcoming paper, "An Accentual Account of Digo Tonology", for an exploration of an accentual treatment of Digo tone patterns.

The additional data examined here reveal the essential correctness of many of the principles established in K&W, at the same time demonstrating the need for modifications at a number of points. Perhaps the most significant result deriving from the exploration of these new data is the conclusion that many of the principles uncovered in K&W are phrasal in scope rather than being applicable only at the word level. Furthermore, I will show that there is an elegant argument that (at least some of) the principles are cyclic in nature, though the details of their cyclic application must await the collection of much additional data.

The paper is divided into five parts. Section 1 summarizes K&W and also proposes some revisions of that analysis; section 2 examines the tonal properties of the most common noun types in Digo; section 3 considers some verb tenses not treated in K&W; section 4 focuses on the tonology of phrases consisting of a verb plus a following noun; and section 5 presents my conclusions.

### 1. A review of K&W, with some suggested revisions.

K&W assume an essentially autosegmental approach to Digo tonology whereby tonal specifications occur on a "tier" separate from the segmental tier, the two tiers being connected by means of "association lines" (cf. Goldsmith 1976). One major departure from most autosegmental analyses is made in K&W--namely, only high tones are specified in underlying representations, low tones being represented as the absence of a high tone. I think that the fact that this particular assumption is a useful one to make will eventually count as support for the accentual treatment of Digo tonology; in any case, I shall continue to follow this assumption about low tones (at the underlying level) in the present paper.

Verb stems and grammatical morphemes in Digo are either low-toned or bear a single high tone. K&W assume that high tones are not associated (underlyingly) with any particular vowel in the morpheme. The underlying representation of a high-toned verb like ku-sindik-á would thus be

H  
/ku-sindik-a/

with no association line connecting the tonal tier and the segmental tier. It is usually claimed for other Bantu languages that in verb stems it is the first vowel of the stem that is either high-toned or low-toned, the other vowels of the stem being assigned their surface tone by rule. I will provide some motivation in this paper for assuming that in the underlying structure of Digo high tones should be associated with a particular vowel (in contrast to the K&W approach), and that in the case of verb stems it is the first vowel of the stem that is specified as high-toned (in accordance with the usual treatment of Bantu languages). Under this reanalysis, the underlying representation of ku-sindik-á would be

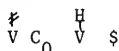
H  
/ku-sindik-a/

with an association line connecting the H of the tonal tier with the first stem vowel.

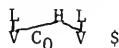
It is a pervasive feature of Digo, however, that high tones do not remain associated with the vowel that they are associated with in underlying structure. The most essential rule in the language that effects the reassociation of high tones is referred to in K&W as High Tone Displacement (HTD). In K&W this rule is formulated so as to associate the rightmost high tone in a word with the penult vowel of the word. K&W refer to this vowel as the "starred" vowel, since it was assumed that a general rule of the language assigns a "star" (cf. Goldsmith 1976 for some discussion of this device) to the penultimate vowel of a word. I prefer to dispense with the use of stars and instead to refer directly to the position of the vowel in the word. However, I would like to suggest that perhaps a better analysis of High Tone Displacement is to say that it reassociates the rightmost high tone of the word with the ultimate vowel rather than the penultimate.

There are various reasons why it is not immediately obvious which vowel the rightmost high tone should be said to have displaced to. One factor that can be mentioned here is the fact that there are two distinct phonetic realizations of the high tone in question. If there is a voiced obstruent, or a cluster containing a voiced obstruent, before the ultimate vowel, then a level high tone appears on the penult vowel--e.g. ku-korōg-a 'to stir', ku-tanyiriz-a 'to drive off predators'.<sup>1</sup> If any other consonant or consonant cluster, or no consonant at all, precedes the ultimate vowel, then the penult is pronounced with a rising pitch and the ultimate vowel with a falling pitch--e.g. ku-sindik-â 'to close the door', ku-garagâr-â 'to toss around in pain'. It should be emphasized that I am speaking here of the pronunciation of these items when they occur at the end of an utterance (and when not preceded by a word that would affect their tonal structure--cf. section 4 for a demonstration that words earlier in a phrase can affect the tonal structure of words later in the phrase).

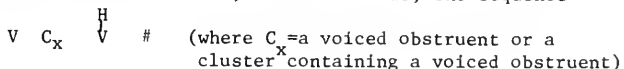
If we assume that HTD reassociates the rightmost high tone in a word with the ultimate vowel, then the pronunciation of items such as ku-sindik-â can be accounted for in terms of a rule (call it Rise-Fall) that converts



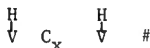
(where  $\text{V}$  means that the vowel is not associated with any specification on the tonal tier and  $\text{\$}$ =utterance-final position) into the structure:



Such a rule has analogues in other Bantu languages (cf. Becker and Massamba (1980)) and thus appears to be well-motivated on cross-linguistic grounds. But what about items such as ku-korōg-a? If we start with the assumption that the high tone on the first stem vowel reassociates with the ultimate vowel, then these cases seem to require a rule retracting the high tone back to the penult vowel. But I shall attempt to demonstrate in this paper that what is actually involved is a process of High Doubling (HD). This rule says that a high tone associated with the ultimate vowel of a word causes a high tone to be assigned to the penult vowel as well, provided that a voiced obstruent occurs between the two vowels; in other words, the sequence



is converted to



where there are two high tones in the representation rather than just one. (I will discuss at a later point why I have opted for introducing a second H on the tonal tier rather than simply adding an association line between the H on the tonal tier and the penult vowel.) Given such a rule of High Doubling, then to derive the surface form ku-korōg-a, we require a rule of Utterance-Final Lowering (UFL). This rule will change a H that is associated with an utterance-final vowel into a low tone (which I represent now with the

symbol L; see below for discussion of this point). UFL will apply, however, just in case the H in question is not followed by any other tone. If we then order Rise-Fall before UFL, we can account for why UFL does not have any effect in the case of items like ku-sindik-á. Since Rise-Fall introduces a L on the tonal tier after the H that is associated with the ultimate vowel, UFL will be prevented from applying to any form that has undergone Rise-Fall.

It should be pointed out here that if high tones are associated with a particular vowel in underlying representations, then the application of HTD must not only associate the rightmost H with the ultimate vowel but also disassociate that H from the vowel with which it was underlyingly associated. The same will be true for the other tonal displacement rules described below.

The proposed derivations for ku-sindik-á and ku-korog-a are given in (1).

(1)	$\begin{array}{c} \text{H} \\   \\ \$\text{ku-sindik-a}\$ \end{array}$	$\begin{array}{c} \text{H} \\   \\ \$\text{ku-korog-a}\$ \end{array}$	
	$\begin{array}{c} \text{H} \\   \\ \text{ku-sindik-á} \end{array}$	$\begin{array}{c} \text{H} \\   \\ \text{ku-korog-á} \end{array}$	HTD
	inapplicable	$\begin{array}{c} \text{H} \text{ H} \\   \quad   \\ \text{ku-korog-á} \end{array}$	HD
	$\begin{array}{c} \text{L} \quad \text{HL} \\ \swarrow \quad \searrow \\ \text{ku-sindik-á} \end{array}$	inapplicable	Rise-Fall
	inapplicable	$\begin{array}{c} \text{H} \\   \\ \text{ku-korog-a} \end{array}$	UFL

A few remarks about the relative ordering of these rules are called for. Obviously, HTD applies first, since it associates a high tone with the ultimate vowel and thus establishes the situation that triggers the other rules. I assume that HD applies before the rule of Rise-Fall. This ordering is based on the assumption that Rise-Fall applies to the sequence

$$\text{V C}_0 \begin{array}{c} \text{H} \\ | \\ \text{V} \end{array} \$$$

and consequently must be blocked from applying in the case of a representation like

$$\begin{array}{c} \text{H} \\ | \\ \$\text{ku-korog-á}\$ \end{array}$$

which satisfies the structural description of Rise-Fall but fails to undergo it. By applying HD first, we obtain the representation

$$\begin{array}{c} \text{H} \text{ H} \\ | \quad | \\ \$\text{ku-korog-á}\$ \end{array}$$

which does not meet the structural description of Rise-Fall.

The motivation for applying Rise-Fall before UFL was given earlier. Since HD must precede Rise-Fall and Rise-Fall must precede UFL, it follows (given the requirement that ordering relationships must be transitive) that HD must also precede UFL. This ordering is independently motivated on the grounds that if UFL were to precede HD, it would change the H in the representation

$$\begin{array}{c} \text{H} \\ | \\ \$\text{ku-korog-á}\$ \end{array}$$

to L and consequently (incorrectly) prevent the application of HD since there would no longer be a H on the ultimate vowel that would trigger doubling onto the penult vowel.

Recall that in underlying representations low tones have been represented as the absence of a high tone. Both Rise-Fall and Utterance-Final Lowering have the function of introducing a low tone (L) into the tonal tier. Ultimately, all of the vowels that do not have a tone associated with them will be assigned the tonal value L.

There is another rule in Digo besides HTD that associates a H with a vowel other than the vowel that the H is underlyingly associated with. K&W refer to this rule as Displacement-to-Stem (D-S). In K&W this rule is phrased to say that a H which is followed by another H in the word will be displaced as far to the right as it can be without passing across a voiced obstruent or a stem vowel.<sup>2</sup> In effect, this rule moves a H to the first stem vowel, unless the H is prevented from getting that far by the presence of a voiced obstruent. K&W show, for example, that a high tone originating on the third singular subject prefix a- in the present tense has the property of displacing to the stem when there is a high tone later in the word. For instance, underlyingly a-na-ézek-á 'he is thatching' has a H associated with the prefix a- and a H associated with the first stem vowel. HTD displaces the stem H to the ultimate vowel (thus triggering the Rise-Fall rule) and D-S associates the prefix H with the first vowel of the stem -ezek-. Underlyingly a-ná-ndunduríz-a 'he is putting s.t. aside' has a H associated with the prefix and a H associated with the first stem vowel. HTD displaces the stem H to the ultimate vowel (eventually triggering HD and UFL) and D-S displaces the prefix H to the vowel that immediately precedes the stem, since the presence of a voiced obstruent in stem-initial position prevents the prefix H from displacing onto the first stem vowel.

Non-final high tones in Digo trigger another process--namely, they associate not just with the vowel to which they are displaced, but also with all subsequent vowels in the word up to (but not including) a vowel that is preceded by a voiced obstruent. I will call this process High Tone Spreading (HTS). If we assume that HTS applies iteratively, it can be formulated very simply to convert the structure



into the structure



(where  $\text{C}_y$ =a consonant that is not a voiced obstruent or a cluster that does not contain a voiced obstruent). Notice that, given this formulation, HTS can only be triggered by a high tone associated with a non-final vowel since high tones associated with an ultimate vowel have no subsequent vowel to spread onto. Since a high tone can appear on a non-final vowel just in case there is a subsequent high tone in the word, it follows that HTS will always be a phenomenon manifested by high tones that are followed by another high tone in the word. Examples of the application of HTS include: a-na-síndík-á 'he is shutting the door', a-na-tányíríz-a 'he is driving off predators', a-na-támánír-á 'he is putting a spell on s.o.', a-na-pépésúk-á 'he is staggering'. (It should be pointed out here that in K&W the falling

quality of the final vowel of items like a-na-síndík-á as opposed to a-na-tányíríz-a, where the final vowel is clearly low-pitched, was erroneously regarded as an insignificant phonetic detail and consequently omitted from the transcriptions. Within the analysis developed in K&W, this falling quality of the last vowel did not follow in any way from the analysis; in the present analysis, however, the phonetic details follow straightforwardly.)

I can now illustrate the derivation of examples such as a-na-síndík-á and a-na-tányíríz-a.

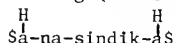
(2)	$\begin{array}{c} \text{H} \quad \text{H} \\ \text{\$} \text{á} \text{-na-síndík-a}\text{\$} \\ \text{H} \quad \text{H} \\ \text{á} \text{-na-síndík-á} \\ \text{a-na-síndík-á} \\ \text{inapplicable} \\ \text{a-na-síndík-á} \\ \text{inapplicable} \\ \text{a-na-síndík-á} \end{array}$	$\begin{array}{c} \text{H} \quad \text{H} \\ \text{\$} \text{á} \text{-na-tányíríz-a}\text{\$} \\ \text{H} \quad \text{H} \\ \text{á} \text{-na-tányíríz-á} \\ \text{a-na-tányíríz-á} \\ \text{a-na-tányíríz-á} \\ \text{a-na-tányíríz-á} \\ \text{inapplicable} \\ \text{a-na-tányíríz-á} \end{array}$	HTD D-S HD HTS Rise-Fall UFL
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A few remarks about these derivations are in order. First, notice that at an intermediate stage in the derivation (namely, after the application of HTS), two different high tones on the tonal tier are associated with the same vowel on the segmental tier. In the case of a-na-síndík-á, the second of these high tones must later in the derivation be changed to low as a consequence of UFL. It has sometimes been suggested that there should be a universal constraint on representations that would automatically change the configuration



(where T=any tonal autosegment) to one where just a single tone exists on the tonal tier. The evidence from (2) suggests that such an automatic reduction of identical tones must not take place if one of the tones is also associated with some other vowel on the segmental tier.

Second, some remarks about the relative ordering of the rules are required. D-S must apply before HTS. If the reverse order obtained, a structure such as the following (where HTD has already been applied)



would be converted to



by HTS. If D-S is then applied to this structure, the result would presumably be that the association lines between the first H and the segmental tier would be erased and a new association line drawn between the H and the first stem vowel. But this would yield the wrong result, since there would be then no association lines between the H and the following vowels--and such association lines are necessary to account for the surface form of a-na-síndík-á. If, however, D-S precedes HTS, the first H will undergo



displacement to the stem vowel and then will spread onto the following vowels. The ordering of HTS and HD is immaterial. HTS must precede Rise-Fall since its application is responsible for the failure of Rise-Fall to apply in the case of items like a-na-síndík-â. Recall that Rise-Fall applies just in case the penult vowel is not associated with the tonal tier; HTS has the effect of associating the penult vowel with a H on the tonal tier in cases like a-na-síndík-â and thus blocks the application of Rise-Fall.

One of the most interesting phenomena in Digo is what K&W refer to as the "neutralization" of certain high tones. A considerable amount of new data bearing on this phenomenon is incorporated in the present paper, thus it is important to review this process in some detail here. In Digo, high-toned verb stems of the shape -C<sub>0</sub>VC<sub>0</sub>- regularly fail to show any reflex of this high tone in surface structure when the high tone is the only high tone in the word (and there is no earlier word in the phrase that might affect the tonal realization of the verb in question--see section 4 for evidence that earlier words in a phrase can affect the tonal shape of later words). For instance, the verb ku-som-a 'to read' is pronounced exactly like ku-gur-a 'to buy'. That the former word is fundamentally different from the latter word is shown by a large number of facts, all of which point to ku-som-a having a high-toned stem underlyingly whereas ku-gur-a has a low-toned stem. For example, suffixation of a tonally-neutral suffix like -ir/-er- (which conveys meanings such as 'to' or 'for' or 'with') results in ku-som<sup>v</sup>er-â versus ku-gurir-a. The fact that ku-som-a loses all trace of its high tone but ku-som<sup>v</sup>er-â does not suggests that the position of the high tone in the word is a relevant factor. Indeed, I will attempt to accumulate some evidence that only a penult high tone can neutralize. Other evidence for claiming that a verb such as ku-som-a is high-toned underlyingly, even though it does not appear to be, comes from (a) cases where another high appears earlier in the word and (b) cases where another word follows. Below I will review the evidence from (a). In section 4 the (b) cases will be dealt with in detail.

When the root -som- appears in a word where there is a high tone associated with a prefix, a unique tonal shape arises, one that is not found in any other circumstance in Digo. For example, in the 3 sg. present tense form (where there is a high tone associated with the prefix a-) we get the surface form a-na-som-a, with a high-falling tone on the penult vowel. It is extremely crucial to note, however, that this high-falling tone on the penult arises just in case the consonant before the penult is not a voiced obstruent. If it is a voiced obstruent, the penult vowel is pronounced just as though it were neutralized (i.e. like a low tone) and the vowel before the voiced obstruent is pronounced as a level high tone; e.g. a-nâ-vug-a 'he is cooking' (cf. ku-vug-a 'to cook', but ku-vug<sup>v</sup>ir-â 'to cook for'). The high tone on the vowel preceding the verb stem in a-nâ-vug-a appears to be a high tone that originates on the a- prefix; the H that I have suggested is associated with the stem -vug- is not directly realized on the surface. However, by inference we can see that -vug- must be high-toned. If it were low-toned, then the H associated with the prefix should have been displaced to the ultimate vowel by virtue of HTD; cf. the case of the low-toned verb -gur-: a-na-gur-a. Similarly, there is every reason to believe that in the case of a-na-som-a, the high part of the high-fall on the penult must originate on the prefix a- and that the low part of the high-fall must be somehow a reflex of the neutralization of the stem high tone. Again, -som- must be high-toned

underlyingly, otherwise we would expect the high tone of the prefix to displace to the ultimate vowel.

I have now reviewed some of the evidence that supports the claim that certain verbs (namely, those of the shape  $-C_0VC_0-$ ) which are underlyingly high-toned undergo a process that (in some instances) neutralizes them with low-toned verbs. I now proceed to a consideration of the form that this neutralization process must be assumed to possess.

Suppose that we assume that what the rule of Neutralization (Neut) does is to convert a H associated with some vowel (to be defined below) to L; it is, of course, important that this rule change the H to L, rather than simply deleting the H, since we would like to be able to see the low part of the high-fall in a-na-sóm-a as being a reflex of the application of Neutralization. It is not clear how we could obtain that result if Neutralization simply deleted the H that is associated with the verb stem underlyingly. Thus Neutralization will be the third rule that we have posited where the output includes introducing a L into the tonal tier.

Turning to the question of which vowel a H must be associated with in order for it to undergo Neutralization, we can first observe that only H's that are underlyingly associated with the verb stem are subject to this rule. Thus we never find a H associated with a subject prefix or a tense-marker or an object prefix that undergoes Neutralization.<sup>3</sup> Furthermore, the H's that neutralize are always associated (underlyingly) with the penult vowel. This remark is based, of course, on the assumption that H's are associated in underlying structure with a particular vowel and that in the case of the verb stem that vowel is the first one in the stem.<sup>4</sup>

Given the assumption that Neutralization affects a penult high tone that derives from the stem, I will suggest an analysis of Neutralization here that differs significantly from that proposed in K&W. The motivation for this reanalysis derives largely from new data presented later in the paper, though the viability of the proposals also depends on other revisions made in the present paper (specifically, the revision of HTD so that it displaces a high tone to the ultimate rather than the penult vowel).

I propose that HTD is restricted so that it does not apply to a high tone (originating in the stem) that is associated with a penult vowel. As a result of this restriction, a structure like

$$\begin{array}{c} \text{H} \\ \$\text{ku-sóm-a}\$ \end{array}$$

will fail to undergo HTD. At some later point in the derivation, Neutralization will apply to change the H to L. (There are a number of high-toned verbs of the structure  $-C_0VC_0-$  that fail to neutralize--cf. ku-nén-á 'to speak', ku-réh-á 'to bring', ku-rór-á 'to marry'. In the present analysis, these verbs will be regarded as being exceptional in that they are exempted from the restriction on HTD. Since they are permitted to undergo HTD, their high tone will displace to the ultimate vowel and thus escape falling under the scope of Neutralization.) In the case of examples like a-na-sóm-a and a-ná-vug-a, the underlying forms will be

$\begin{array}{cc} \text{H} & \text{H} \\ \text{\$}\hat{\text{a}}\text{-na-s}\hat{\text{o}}\text{m-a}\text{\$} & \text{\$}\hat{\text{a}}\text{-na-vug-a}\text{\$} \end{array}$

and again HTD will be blocked due to the restriction that bars it from affecting a H on the penult (that originates in the stem). Ultimately, Neutralization will also apply, changing the second H to L. But in addition it is necessary that the first H displace to the penult vowel in the former case and to the antepenult in the latter case. K&W tacitly assume that the displacement in these instances is to be accomplished by the rule of Displacement-to-Stem. This assumption is a natural one, given the data so far examined, since in a-na-som-a and a-nā-vug-a the neutralized vowel is in fact the first stem vowel and the prefix H does attempt to displace to that vowel (succeeding in the former case, but being blocked from getting to the stem vowel in the latter case by the voiced obstruent in stem-initial position). Despite the similarity between the displacement in the present examples and the rule of D-S, I will present evidence showing that a third displacement rule is actually at work. This third rule is distinct from both HTD and D-S, but it shares with D-S the restriction that the H cannot be associated with the designated vowel (i.e. the vowel to which it is trying to displace) if that vowel is preceded by a voiced obstruent. In such cases, the H must be associated with the vowel preceding the designated vowel.<sup>5</sup> The details of the formulation of this third displacement rule (call it Displacement-to-Neutralized Vowel (D-NV)) will be discussed at the point where the relevant data arise. The ordering of this rule will also be dealt with at that point.

There is another rule in Digo that has the effect of eliminating an underlying H. The only situation where this rule has so far been found to be operative is when a high-toned verb stem follows a high-toned object prefix.<sup>6</sup> Only one of these H's is manifested on the phonetic surface. For example, the surface manifestation of the underlying structure

$\begin{array}{cc} \text{H} & \text{H} \\ \text{\$}\text{ku-a-pu}\hat{\text{p}}\text{ut-a}\text{\$} \end{array}$

is ku-a-puput-â 'to hit them', which is tonally indistinguishable from a verbal form that has a single H in its underlying structure--cf. ku-puput-â 'to hit'. This suggests that one of the H's from the underlying representation of ku-a-puput-â should be eliminated.

It is not immediately apparent, of course, which H is lost; nor is it immediately apparent whether the rule in question should change H to L or simply delete the H. Fortunately, one piece of crucial evidence exists bearing directly on these questions. Consider the high-toned verb ku-on-a 'to see' (cf. ku-onan-â 'to see one another'). This is a verb that is subject to Neutralization. Now, if a high-toned object prefix is inserted, we get ku-a-on-â 'to see them'. Notice that in this form a H undergoes High Tone Displacement, associating with the ultimate vowel and thus triggering Rise-Fall. But we know that the stem H could not be the one that undergoes HTD,

since the H associated with the stem -on-a is exempted from undergoing HTD. On the other hand, the prefix H could undergo HTD, but only if it were the rightmost H in the word. Thus we see that the stem H must be lost in order for the prefix H to undergo HTD. It would be simplest to assume that the H of the stem is simply deleted. If it were changed to L instead, we would get the intermediate structure

$$\begin{array}{c} \text{H} \quad \text{L} \\ \text{\$ku-a-on-a\$} \end{array}$$

and if we attempted to associate the first H with the ultimate vowel we would cross an association line (a situation that is prohibited in autosegmental phonology). I therefore assume a rule of High Erasure (HE), which erases the H specification on the first vowel of a verb stem when a H is associated with a preceding object prefix.<sup>7</sup> Given this rule, the derivation of ku-a-on-a will proceed as follows.

- (3)  $\begin{array}{l} \text{H} \quad \text{H} \\ \text{\$ku-a-on-a} \\ \text{H} \\ \text{ku-a-on-a} \quad \text{HE} \\ \text{H} \\ \text{ku-a-on-a} \quad \text{HTD} \\ \text{inapplicable} \quad \text{Neut} \\ \text{inapplicable} \quad \text{D-S} \\ \text{inapplicable} \quad \text{HD} \\ \text{inapplicable} \quad \text{HTS} \\ \text{L} \quad \text{H} \quad \text{L} \\ \text{ku-a-on-a} \quad \text{Rise-Fall} \\ \text{inapplicable} \quad \text{UFL} \end{array}$

In this derivation, HE is ordered before HTD since the erasure of the stem H renders the prefix H eligible for HTD.

Below I list the rules that I have suggested and indicate those pairs of rules for which a definite ordering relationship has been established.

- (4)  $\begin{array}{l} \text{High Erasure (HE)} \\ \text{High Tone Displacement (HTD)} \\ \text{Neutralization (Neut)} \\ \text{Displacement-to-Stem (D-S)} \\ \text{High Doubling (HD)} \\ \text{High Tone Spreading (HTS)} \\ \text{Rise-Fall} \\ \text{Utterance-Final Lowering (UFL)} \end{array}$

I do not believe that there is any direct evidence that HTD must precede D-S, though naturally this issue depends upon the details of the formulation of D-S. I have not included the suggested rule of Displacement-to-Neutralized Vowel in the list of rules since I have not yet dealt in any way with its formulation or its ordering.

## 2. Noun tonology.

Since some of the most significant evidence concerning Digo tonology derives from an examination of phrases consisting of a verb plus a noun, it is necessary for me to examine and to analyze the tonal behavior exhibited by nouns outside the context of such phrases so that we can properly appreciate the results of combining these nouns with verbs into verb phrases. The study of noun tonology, however, is itself a matter that requires extended treatment and cannot be dealt with fully here. In any case, much research is still required for a complete understanding of the full range of noun tonal patterns; all that I intend to do here is to motivate the existence of three tonally distinct groups of nouns which represent the simplest cases (from a tonal perspective) and also the most frequent types in the language.

The simplest way to begin to get at the tonal structure of nouns in Digo is to compare the simple noun with its locative form. Locatives in Digo are derived by suffixing *-ni* to the simple form of the noun. In (1) below I illustrate a very large class of nouns which both in their simple form and in their locative form are pronounced with the intonation typical of verbal words that lack any high tone.<sup>8</sup>

(5)	n-jira	path(s)	n-jira-ni
	mu-hama	millet	mu-hama-ni
	tsongo	bird(s)	tsongo-ni
	mu-hambo	trap	mu-hambo-ni
	ma-ruwa	flowers	ma-ruwa-ni
	gari	car	gari-ni
	tunda	fruit	tunda-ni
	banda	shed	banda-ni
	goma	drum	goma-ni
	chi-ronda	sore	chi-ronda-ni

Nouns such as those in (5) are, I claim, best regarded as being ones which do not have a H associated with any of their vowels. I will refer to these simply as low-toned nouns.

Another very large class of nouns in Digo is illustrated in (6). In their simple form, these nouns are pronounced with the intonation characteristic of verb words that lack any high tones. However, in their locative form, these nouns are pronounced in a fashion entirely analogous to verbal words that have a single high tone associated with them.

(6)	biga	water pot	biga <sup>v</sup> -ni <sup>^</sup>
	renje	pumpkin	renje <sup>v</sup> -ni <sup>^</sup>
	fumo	spear	fumo <sup>v</sup> -ni <sup>^</sup>
	tsui	leopard(s)	tsui <sup>v</sup> -ni <sup>^</sup>
	vi-yogwe	sweet potatoes	vi-yogwe <sup>v</sup> -ni <sup>^</sup>
	mu-kono	hand, arm	mu-kono <sup>v</sup> -ni <sup>^</sup>
	ny-umba	house(s)	ny-umba <sup>v</sup> -ni <sup>^</sup>
	ny-ungu	pot(s)	ny-ungu <sup>v</sup> -ni <sup>^</sup>
	gunguhi	bed leg	gunguhi <sup>v</sup> -ni <sup>^</sup>
	ṁ-fumbati	side-bar of bed	ṁ-fumbati <sup>v</sup> -ni <sup>^</sup>

Nouns such as those in (2) are, I claim, best regarded as being nouns which have a H associated with one of the vowels of the stem, this high tone being lost from the simple form but maintained in the locative form. This sort of analysis has, of course, a clear precedent in the verbal system. Recall that the rule of Neutralization has the effect of changing a H (originating on a stem) into L. This rule accounts for the fact that a high-toned stem such as in ku-on-a 'to see' (cf. ku-onan-a 'to see one another') is pronounced like a low-toned verb.

If it is assumed that the noun stems in (2) have a H in their underlying representations, the question arises as to whether this H is associated with any particular vowel of the noun. In section 1 it was suggested that perhaps Neutralization should be formulated so as to affect penult vowels. If we follow this suggestion, then the H tone on the nouns in (2) would be associated with their penult vowel. In the case of noun stems of the shape  $-C_0VC_0V$ , the penult vowel is the first stem vowel. But in longer nouns, the penult vowel is not necessarily the first stem vowel. For example, in gunguhi, the penult vowel is the second stem vowel. Thus if we are going to claim that it is the rule of Neutralization that affects the H of the nouns in (2), and if Neutralization affects only penult vowels, then it follows that in the case of nouns there is no restriction that a H tone may appear only on the first stem vowel. (Recall that in the case of verbs, I suggested that only the first stem vowel could have a H associated with it.) This result would be compatible with what we know of other Bantu languages--in general, a high tone is not limited to the first stem vowel in nouns. Because of this disparity between verbs and nouns, there are no verbs of the shape  $-C_0VC_0VC_0-a$  that undergo Neutralization whereas there are noun stems of this shape that do. Notice that if we did not assume that high tones were associated with particular vowels, it would be difficult to explain why a noun such as gunguhi undergoes Neutralization whereas verbs of the shape  $-C_0VC_0VC_0-a$  are not susceptible to Neutralization. Thus one motivation for assuming that H's are associated with a particular vowel comes from a desire to account in a systematic fashion for this contrast in behavior.

Let us at this point turn our attention to a third type of noun, which is illustrated in (7).

(7)	kundê	beans	kundê-nî
	kandê	food	kandê-nî
	chi-kôpwê	sweet potato	chi-kopwê-nî
		leaves	
	pwêza	octopus	pwêzâ-nî
	zôdo	cooked mangos	zôdô-nî
	bâtâ	duck	bâtâ-nî
	bundâ	bunch, cluster	bundâ-nî
	sahanî	plate(s)	sahanî-nî
	kofiyâ	hat(s)	kofiyâ-nî
	bâda	cassava meal	bâdâ-nî
	dônâ	hard porridge	dônâ-nî
	chi-tâbu	book	chi-tâbu-nî

The simple forms of the nouns in (7) indicate quite clearly that these nouns have a H associated with them in underlying structure. This H undergoes HTD, thus triggering either Rise-Fall or HD followed by UFL. The fact that these H's do undergo HTD means either that they are associated with a non-penult vowel that is therefore subject to HTD or that they are associated with a penult stem vowel, but are marked as exceptions to the constraint that these vowels do not undergo HTD. For my present purposes it is not necessary to determine which explanation holds in any given case, since all that is crucial is that these are instances of nouns that do undergo the displacement of their high tone to the ultimate vowel. The locative forms in (7) are quite problematic and I will not attempt to develop an analysis of them here.<sup>9</sup> They do demonstrate, however, that the nouns in (7), which have a H subject to HTD, behave differently from the nouns in (6), which have a H that escapes HTD (and subsequently undergoes Neut).

Suffixation of the locative element -ni provides clear evidence for three subtypes of nouns--low-toned nouns like those in (5), high-toned nouns that fail to undergo HTD and are subject to Neut as in (6), and high-toned nouns that undergo HTD as in (7). Much additional support for this three-way distinction will be adduced in section 4, where I examine verb plus noun phrases; there is, however, additional support from other sorts of phrases. Here I will mention just phrases consisting of a noun plus the first person singular possessive word (which consists of the stem -angu preceded by a prefix that agrees with the noun class of the noun that -angu modifies). Consider first the case of nouns that I am regarding as low-toned.

- (8)    banda r-<sup>v</sup>angu<sup>^</sup>    my shed  
       chi-ronda ch-<sup>v</sup>angu<sup>^</sup>    my sore  
       ny-ama y-<sup>v</sup>angu<sup>^</sup>    my meat  
       mu-hama w-<sup>v</sup>angu<sup>^</sup>    my millet  
       podzo z-angu<sup>^</sup>    my sp. green beans  
       ma-zu g-<sup>v</sup>angu<sup>^</sup>    my bananas

On the basis of these data, I would assume that the possessive stem -angu has a H associated with it--a H that does undergo HTD. The noun has no H associated with it. All that happens, then, in these phrases is that the H of the possessive stem displaces to the ultimate vowel, triggering Rise-Fall.

Consider next the case of nouns that fail to undergo HTD, instead being subject to Neut.

- (9)    ny-umba y-<sup>^</sup>angu    my house  
       renje r-<sup>^</sup>angu    my pumpkin  
       mu-kono w-angu    my hand, arm  
       gunguhi r-<sup>^</sup>angu    my bed leg  
       ma-zobé g-angu    my crabs  
       ma-dzungú g-angu    my sp. pumpkins  
       m-barazí z-angu    my sp. green beans  
       vi-yogwé vy-angu    my sweet potatoes

These examples provide clear evidence that nouns like those in (5) are tonally different from those in (6). Certain aspects of the tonal shapes of these phrases, however, are relevant to the concerns of this paper (beyond just supporting the claim that there is a contrast between the nouns in (5) and those in (6)) and thus merit scrutiny.

First, notice that the stem -angu has a H that undergoes HTD when it follows a low-toned noun, as in (8), but behaves differently after the high-toned nouns in (9). The behavior of -angu can be easily summarized---angu behaves, in (9), as though it has a H associated with the penult stem vowel that fails to undergo HTD and instead is subject to Neut. In other words, ny-umba y-angu is akin to a-na-sôm-a and ma-zobê g-angu is akin to a-nâ-vug-a. I assume, therefore, that whereas in (8) -angu has a H that is subject to HTD, in (9) -angu has a H associated with its penult vowel and this H is not subject to HTD but undergoes Neut instead. How precisely one should account for this difference in the behavior of -angu is not clear; the phenomenon seems to be restricted to these possessive phrases (-angu is not the only possessive stem; a number of others behave in parallel fashion), and I will not dwell on the matter here.

Second, notice that the phrases in (9) provide very strong support for the claim that nouns such as those in (6) have a H associated with them underlyingly, even though this H is lost from the surface through the application of Neut. The H associated with the noun actually appears in the phrases in (9). It does not, of course, appear on the penult vowel of the noun, where I have assumed that it is underlyingly located. In examples such as ny-umba y-angu, the H of the noun displaces to the penult vowel of the phrase and in ma-zobê g-angu to the antepenult vowel of the phrase. In other words, the H of the noun behaves entirely analogously to the prefix H in a-na-sôm-a and a-nâ-vug-a. Recall that in section 1, I suggested that the displacement involved here is not to be accomplished by D-S, but rather by a third rule of displacement which will be called Displacement-to-Neutralized Vowel (D-NV). Assuming that there is such a rule, distinct from D-S, I can now make some observations about its role. The possessive phrases in (9) support the view that D-NV must be a phrase-level rule, since a H in the noun is being displaced either to the neutralized vowel in the possessive word or to the vowel that precedes the neutralized vowel. (9) also gives some indication of the ordering of D-NV. Notice that in the case of ma-zobê g-angu, the H of the noun associates with the word-final vowel of the noun but does not induce the application of High Doubling. This indicates that High Doubling must precede D-NV, since otherwise D-NV would trigger the application of HD. The suggested derivations for ny-umba y-angu and ma-zobê g-angu are given in (10).

(10)	\$ny-umba y-angu\$	\$ma-zobê g-angu\$	
	H            H	H            H	
	inapplicable	inapplicable	HE
	inapplicable	inapplicable	HTD
	H            L	H            L	
	ny-umba y-angu	ma-zobê g-angu	Neut
	inapplicable	inapplicable	HD
	H            L	H            L	
	ny-umba y-angu	ma-zobê g-angu	D-NV
	inapplicable	inapplicable	D-S
	inapplicable	inapplicable	HTS
	inapplicable	inapplicable	Rise-Fall
	inapplicable	inapplicable	UFL



A couple comments on these derivations are in order. First, notice that Neut must not apply to the H associated with the penult vowel of the noun in these phrases, although it does apply to the H associated with the penult vowel of the possessive word. I propose that the explanation for these facts is that Neut applies to a H associated with a penult vowel (where the H originates in the stem) in the last word in the phrase. In other words, Neut is a rule that is phrase-level in the sense that it is triggered by a phrase boundary. See section 4 for more discussion of this point. Second, the derivations in (10) show Neut preceding D-NV. This ordering will be critical if it turns out that D-NV is triggered by the L that results from Neut. This issue will be discussed in section 4 when more evidence for D-NV is examined. Third, the derivations in (10) show D-NV preceding D-S. The motivation for this ordering is that we do not want to give D-S an opportunity to apply in derivations where D-NV applies. Again, more on this matter in section 4. Finally, if HD precedes D-NV (as I argued above) and if D-NV precedes D-S (as suggested above), we will have the result that (by transitivity of rule ordering) HD precedes D-S. In the list of rules in (4), D-S was put before HD; this was an arbitrary move, however, since there seems to be no direct evidence as to how these two rules should be sequenced (I leave it to the reader to convince him- or herself of this point).

Possessive phrases can also be used to establish the existence of a third class of nouns--namely, those in (7) that have a H associated with them that does undergo HTD. Consider the examples in (11).

- |      |           |         |                        |
|------|-----------|---------|------------------------|
| (11) | kundé     | z-angu  | my sp. beans           |
|      | kändé     | z-angu  | my food                |
|      | chi-köpwe | ch-angu | my sweet potato leaves |
|      | zódo      | r-angu  | my mangos              |
|      | pwéza     | w-angu  | my octopus             |

These phrases show that after high-toned nouns which are subject to HTD, -angu behaves just as it does after low-toned nouns--namely, the H of -angu undergoes HTD and then Rise-Fall. The H associated with the noun behaves exactly as it does when these nouns are in phrase-final position. An analysis of these phrases will not be attempted here (since a full examination of noun phrase behavior is outside the scope of this paper), but the data clearly establishes that nouns such as those in (7) are distinct both from those in (5) and those in (6).<sup>10</sup>

### 3. Some new verb tenses.

K&W examine three verbal tenses: the infinitive, the present tense, and the -ka- perfective. There are other verbal tenses whose tonal patterns are entirely analogous to the tenses K&W consider. For example, the future tense parallels the present tense in terms of its tonal behavior. The future marker -nda- does not have a H associated with it, while third person subject prefixes in this tense do have a H associated with them; the lexical tone of the verb stem remains unmodified, just as in the present tense (in other words, verb stems that have a lexical H continue to have this H in the present and the future, while verb stems that do not have a lexical H do not exhibit a H in the present and the future; in Digo, as in other Bantu languages, the lexical tone of a verb may be altered in some tenses). Some examples of the future tense:

(12) a. low-toned stems

ni-nda-sagar-a	'I will sit down'
ni-nda-tegur-a	'I will knock s.t. off/over'
ni-nda-çhit-a	'I will pierce'
a-nda-çhit-â	'he will pierce'
ni-nda-raBiz-a	'I will insult'
a-nda-raBiz-a	'he will insult'

b. high-toned stems that undergo Neutralization

ni-nda-vug-a	'I will cook'
a-ndã-vug-a	'he will cook'
ni-nda-som-a	'I will read'
a-nda-sôm-a	'he will read'

c. high-toned stems that undergo HTD

ni-nda-nên-â	'I will speak'
a-nda-nên-â	'he will speak'

In (12a) there are no H's except in the case of the forms that have the subject prefix a-, which is high-toned in this tense. The H of this prefix displaces to the ultimate vowel, triggering Rise-Fall in a-nda-çhit-â and triggering HD and UFL in a-nda-raBiz-a. In (12b), the verb stems have a H associated with them; this H does not undergo HTD but rather is subject to Neut. In the case of the forms with the a- prefix, the H associated with this prefix attempts to displace to the penult vowel--succeeding in the case of a-nda-sôm-a but landing on the antepenult vowel in the case of a-ndã-vug-a due to the voiced obstruent in front of the penult vowel. In (12c), the stem has a H tone that is subject to HTD. In ni-nda-nên-â, Rise-Fall has applied to the output of HTD. In the case of a-nda-nên-â, we have the following derivation:

(13)	$\overset{H}{\text{}}\text{ã-nda-nên-a}\overset{H}{\text{}}$	
	inapplicable	HE
	$\overset{H}{\text{}}\text{ã-nda-nên-â}\overset{H}{\text{}}$	HTD
	inapplicable	Neut
	inapplicable	HD
	inapplicable	D-NV
	$\overset{H}{\text{}}\text{a-na-nên-â}\overset{H}{\text{}}$	D-S
	$\overset{H}{\text{}}\text{a-na-nên-â}\overset{H}{\text{}}$	HTS
	inapplicable	Rise-Fall
	$\overset{H}{\text{}}\text{a-na-nên-â}\overset{L}{\text{}}$	UFL

Similarly, the -chi- tense (narrative past, conditional) parallels the -ka- perfective tense in terms of tone. There is a H associated with this verb tense, regardless of the person/number/gender of the subject prefix and regardless of the lexical tone of the verb. I will assume that the H supplied by this particular tense is associated with the -chi- prefix (a similar assumption in K&W was made with respect to the -ka- tense). In addition to this H, the verb stem may be either high- or low-toned. Some examples:

(14) a. low-toned stems

ni-chi-rim-á	'I cultivated/if I cultivate'
ni-chi-ríB-á	'I paid/if I pay'
ni-chi-vóy-á	'I begged/if I beg'
ni-chi-vumikíZ-a	'I agreed/if I agree'

b. high-toned stems that undergo Neutralization

ni-chi-wád-a	'I roasted/if I roast'
ni-chi-sóm-a	'I read/if I read'
ni-chí-vug-a	'I cooked/if I cook'

c. high-toned stems that undergo HTD

ni-chi-tóngóy-á	'I preceded/if I precede'
ni-chi-Bírík-á	'I sent/if I send'
ni-chí-banáng-á	'I spoiled s.t./if I spoil s.t.'

In (14a), there is a single H (namely, the H associated with the prefix -chi-) which displaces to the ultimate vowel, triggering Rise-Fall in cases like ni-chi-rim-á and triggering HD and UFL in ni-chi-vumikíZ-a. In (14b), there is a H associated with the -chi- but also one associated with the first stem vowel. This stem H fails to undergo HTD (since it is a stem H associated with a penult vowel), subsequently being changed to L by Neut. The prefix H attempts to associate with the neutralized vowel--succeeding in the case of ni-chi-sóm-a but remaining on the prefix in the case of ni-chí-vug-a due to the voiced obstruent in front of the neutralized vowel. In (14c), there is a H associated with the -chi- and also with the first stem vowel. The stem H displaces to the ultimate vowel and the prefix H undergoes D-S, which attempts to associate it with the first stem vowel--succeeding in the case of ni-chi-tóngóy-á, for example, but failing in the case of ni-chí-banáng-á due to the voiced obstruent in stem-initial position. This H associated with the first stem vowel then spreads onto the remaining vowels in the word in the case of ni-chi-tóngóy-á but is blocked from spreading in the case of ni-chí-banáng-á. UFL changes the last H to L in the former case.

But in addition to tenses like the above which are parallel in behavior to the tenses examined in K&W, there are other tenses that show distinct tonal properties. I cannot deal with all of the tenses here, but I do examine a few especially interesting ones.

3.1. The -a- past tense.

The morphological structure of the past tense in Digo is SP+a+(OP)+VS+a, where SP=subject prefix, OP=object prefix, and VS=verb stem. The choice of subject prefix does not alter the tonal shape of past tense forms in any way; consequently, all of the examples cited will be with the same SP--namely, the 1 sg. subject prefix, which is ordinarily ni- but assumes the form n- in front of the -a- past tense marker. Examples of this construction are given in (15).

(15) a. low-toned stems

n-a-tsúkúr-á	'I carried'
n-a-wóchér-á	'I received'
n-a-róngó-z-a	'I led'
n-a-tsó-r-á	'I picked up'
n-a-píg-a	'I hit'
n-á-gúr-á	'I bought'
n-á-vugúr-á	'I untied'
n-á-vumikíz-a	'I agreed'
n-a-tógör-á	'I praised'
n-a-rágúr-á	'I treated'
n-á-dzèng-á	'I built'

b. high-toned stems that undergo Neut

n-á-meg-a	'I broke off a piece'
n-á-san-a	'I forged'
n-á-rum-a	'I bit'
n-á-Bah-a	'I got'
n-á-hem-a	'I cleared forest'
n-á-vwin-a	'I sang'

c. high-toned stems that undergo HTD

n-a-kúmbúkír-á	'I remembered'
n-a-túrúk-á	'I went out'
n-a-púpút-á	'I beat'
n-a-nén-á	'I spoke'
n-á-vwinír-á	'I sang for'
n-á-dunduríz-a	'I put s.t. aside'
n-á-garagar-á	'I rolled about in pain'
n-á-dung-á	'I pierced'
n-a-ézek-á	'I thatched'

Consider first the data in (15a). The verb stems in question are low-toned at the lexical level, but nevertheless the tonal shapes that they exhibit in the past tense are entirely analagous to verbal forms that contain two high tones. The rightmost of these two H tones is displaced to the ultimate vowel and the preceding H displaces to the first stem vowel (if it can, otherwise the vowel preceding the stem), from which it spreads onto following vowels (provided it is not stopped from doing so by the presence of a voiced obstruent). The data in (15a) parallel precisely the behavior of high-toned verbs in the -ka- tense. This is illustrated in (16).

- (16) a-ka-kũmbũkĩr-â<sup>â</sup> 'he has remembered' (cf. ku-kumbukĩr-â<sup>â</sup>)  
 vs.  
 n-a-tsũkũr-â<sup>â</sup> 'he carried' (cf. ku-tsukur-a)
- a-kã-ɗundurĩz-a 'he has put s.t. aside' (cf. ku-ɗundurĩz-a)  
 vs.  
 n-ã-vumikĩz-a 'he agreed' (cf. ku-vumikiz-a)
- a-ka-tãbĩk-â<sup>â</sup> 'he is troubled' (cf. ku-tabĩk-â<sup>â</sup>)  
 vs.  
 n-a-rãgũr-â<sup>â</sup> 'he treated' (cf. ku-ragur-a)

The data in (15a), therefore, present no new problems except for the following: where are the two H's in this construction located? What we know for certain about these H's is that the rightmost one is subject to HTD. This tells us nothing really about its location underlyingly--since H's displaced to the ultimate vowel could originate on a prefix or on a stem or even (conceivably) on the final vowel -a. The first H in the word is subject to D-S, and this provides some clue as to its location since in all other cases a H that displaces to the stem is located to the left of the stem. Thus it is reasonable to conclude that the first H in these words is located on one of the prefixes, either the subject prefix or the -a- past tense marker. Further insight into the location of the H's can be derived from the data in (15b).

The verb stems in (15b) underlyingly have a H associated with them. The data in (15a) suggest that the past tense construction has two H's associated with it, independent of any lexical tone of the verb. Are there, then, three H's in the case of the verbs in (15b)? Note that the examples in (15b) are different from those in (15a). This suggests that there must indeed be a tonal difference. Wherein does the difference reside? Clearly one difference is that in (15a) HTD has been able to apply, whereas there is no sign that HTD has applied in (15b). One way to explain this failure of HTD to apply would be to claim that in an example such as n-ã-san-a, the rightmost H in the underlying form is the H associated with the stem -san-. This means that any other H's in the word (namely, the two H's associated with the past tense morphology in general) must be located to the left of the stem. If we make this assumption, then the failure of HTD to apply in (15b) follows from the fact that a H associated with a penult vowel (where the H originates in the stem) is regularly exempted from HTD, subsequently undergoing Neut.

A second difference between (15a) and (15b) is that in the latter case D-S has not displaced a H all the way to the first stem vowel (a failure that cannot be attributed to the presence of a voiced obstruent), whereas in the former case such a displacement has taken place (except for instances where a voiced obstruent has blocked the displacement). Another fact about (15b) requires mention--namely, there is no surface manifestation of D-NV. We need, then, to account both for why D-S has not shifted a H to the first stem vowel and for why D-NV has no surface manifestation.

If we assume that the underlying structure of n-ã-san-a is

$$\begin{array}{ccccccc} & & H & H & H & & \\ & & | & | & | & & \\ \S & n & i & - & a & - & s & a & n & - & a & \S \end{array}$$

then we will get the following partial derivation:

- (17)
- |   |      |
|---|------|
| $\begin{array}{c} \text{H} \quad \text{H} \quad \text{H} \\ \diagdown \quad \diagup \quad \diagdown \\ \text{\$ni-a-san-a\$} \end{array}$ |      |
| $\begin{array}{c} \text{H} \quad \text{H} \quad \text{L} \\ \diagdown \quad \diagup \quad \diagdown \\ \text{ni-a-san-a} \end{array}$     | HE   |
| $\begin{array}{c} \text{H} \quad \text{H} \quad \text{L} \\ \diagdown \quad \diagup \quad \diagdown \\ \text{ni-a-san-a} \end{array}$     | HTD  |
| $\begin{array}{c} \text{H} \quad \text{H} \quad \text{L} \\ \diagdown \quad \diagup \quad \diagdown \\ \text{ni-a-san-a} \end{array}$     | Neut |
| $\begin{array}{c} \text{H} \quad \text{H} \quad \text{L} \\ \diagdown \quad \diagup \quad \diagdown \\ \text{ni-a-san-a} \end{array}$     | HD   |
| $\begin{array}{c} \text{H} \quad \text{H} \quad \text{L} \\ \diagdown \quad \diagup \quad \diagdown \\ \text{ni-a-san-a} \end{array}$     | D-NV |

At this point in the derivation, D-S will try to apply. D-S as so far formulated will associate a H with the first stem vowel, unless it is prevented from doing so by the presence of a voiced obstruent. Thus we would expect the H associated with the SP to displace to the stem -san-; but this would yield an incorrect result, since we want this H to associate instead with the tense marker -a-. I suggest that D-S be constrained so that it may not associate a H with a vowel that is associated with a L on the tonal tier.<sup>11</sup> This constraint would have the effect of preventing D-S from ever associating a H with a neutralized vowel. Given, then, the unavailability of the stem vowel, the farthest vowel to the right that the prefix H can displace to is the tense marker -a-. The derivation in (17) will thus continue as follows:

- (18)
- |   |           |
|---|-----------|
| $\begin{array}{c} \text{H} \quad \text{H} \quad \text{L} \\ \diagdown \quad \diagup \quad \diagdown \\ \text{\$ni-a-san-a\$} \end{array}$ |           |
| $\begin{array}{c} \text{H} \quad \text{H} \quad \text{L} \\ \diagdown \quad \diagup \quad \diagdown \\ \text{ni-a-san-a} \end{array}$     | D-S       |
| $\begin{array}{c} \text{H} \quad \text{H} \quad \text{L} \\ \diagdown \quad \diagup \quad \diagdown \\ \text{ni-a-san-a} \end{array}$     | HTS       |
| $\begin{array}{c} \text{H} \quad \text{H} \quad \text{L} \\ \diagdown \quad \diagup \quad \diagdown \\ \text{ni-a-san-a} \end{array}$     | Rise-Fall |
| $\begin{array}{c} \text{H} \quad \text{H} \quad \text{L} \\ \diagdown \quad \diagup \quad \diagdown \\ \text{ni-a-san-a} \end{array}$     | UFL       |

Although this derivation yields an incorrect surface form (\*n-ā-san-a), the correct surface form can be readily obtained if we assume a rule that eliminates an association line between a H and vowel if that vowel (a) is associated with a L and (b) is preceded by a vowel that is associated with a H. Call this rule Fall Simplification (FS). It has the effect of changing a falling tone to a low tone if the preceding vowel is high-toned. (I assume that when FS eliminates the association line between the vowel and the H, if the H is thus left unassociated with a vowel on the segmental tier, it will simply be deleted from the representation. Alternatively, it could be allowed to reassociate with the preceding vowel. In the present situation, at least, the result would be the same as far as the surface structure goes.) Given the postulation of FS, the derivation begun in (17) and continued in (18) will conclude as in (19).

- (19)
- |   |  |
|---|--|
| $\begin{array}{c} \text{H} \quad \text{H} \quad \text{L} \\ \diagdown \quad \diagup \quad \diagdown \\ \text{\$ni-a-san-a\$} \end{array}$ |  |
| $\begin{array}{c} \text{H} \quad \text{L} \\ \diagdown \quad \diagup \\ \text{ni-a-san-a} \end{array}$                                    | FS   |
| $\begin{array}{c} \text{H} \quad \text{L} \\ \diagdown \quad \diagup \\ \text{n-a-san-a} \end{array}$                                     | deletion of prefix vowel before <u>-a-</u> |

In this particular case, the relative ordering of FS and Rise-Fall is immaterial (since Rise-Fall is inapplicable here), so I will return later to this particular ordering relationship. FS must follow HTS, however, since FS eliminates an association line that is supplied by that rule.

Although there are perhaps other ways of accounting for n-á-san-a and the other data in (15b), the preceding account will be adopted in this paper. FS in particular appears to me to be a quite natural rule and ought to be invoked in explaining the absence of any surface manifestation of D-NV. Let us now turn to the data in (15c). The verb stems here are ones that have a H associated with their first vowel (at the lexical level), a H that would be expected to undergo HTD. The analysis of Digo that I have elaborated here predicts the following derivation.

- (20)
- |                     |  |                                    |
|---------------------|--|------------------------------------|
| H H H               |  |                                    |
| \$ni-á-kumbukir-a\$ |  |                                    |
| inapplicable        |  | HE                                 |
| H H H               |  |                                    |
| ni-á-kumbukir-á     |  | HTD                                |
| inapplicable        |  | Neut                               |
| inapplicable        |  | HD                                 |
| inapplicable        |  | D-NV                               |
| H H H               |  |                                    |
| ni-a-kumbukir-á     |  | D-S                                |
| H H H               |  |                                    |
| ni-a-kumbukir-á     |  | HTS                                |
| inapplicable        |  | FS                                 |
| inapplicable        |  | Rise-Fall                          |
| H H L               |  |                                    |
| ni-a-kumbukir-á     |  | UFL                                |
| H H L               |  |                                    |
| n-a-kumbukir-á      |  | deletion of prefix vowel before -a |

This derivation yields the correct surface form: n-a-kumbukir-á. The most notable point about this derivation is that D-S will associate both of the prefix H's with the first stem vowel. At the phonetic level, of course, two H's associated with a single vowel will be identical to one H.<sup>12</sup>

The proposed analysis also predicts the correct surface form for an example such as n-a-ézek-á.

- (21)
- |                 |  |                                    |
|-----------------|--|------------------------------------|
| H H H           |  |                                    |
| \$ni-á-ézek-a\$ |  |                                    |
| inapplicable    |  | HE                                 |
| H H H           |  |                                    |
| ni-á-ézek-á     |  | HTD                                |
| inapplicable    |  | Neut                               |
| inapplicable    |  | HD                                 |
| inapplicable    |  | D-NV                               |
| H H H           |  |                                    |
| ni-a-ézek-á     |  | D-S                                |
| inapplicable    |  | HTS                                |
| inapplicable    |  | FS                                 |
| H H L H L       |  |                                    |
| ni-a-ézek-á     |  | Rise-Fall                          |
| inapplicable    |  | UFL                                |
| H H L H L       |  |                                    |
| n-a-ézek-á      |  | deletion of prefix vowel before -a |

In this derivation we can see that FS must precede Rise-Fall. If the reverse order obtained, FS would be able to apply to the output of Rise-Fall and eliminate the falling tone on the ultimate vowel in favor of a low tone (since we would have a H associated with a vowel that (a) is also associated with a L and (b) is preceded by a vowel that has a H associated with it). By applying FS first, we keep it from affecting the output of Rise-Fall.

The derivations of the remaining items in (15c) either parallel those given above or reflect additional phenomena that have been adequately discussed elsewhere in this paper. I conclude, then, that the tonal pattern of the -a- past tense can be accounted for if (a) we assume that there are two H's supplied by the past tense morphology, one of these H's presumably being associated with the subject prefix and the other with the -a- prefix; (b) the stem retains its lexical tone specification; (c) D-S cannot associate a H with a vowel that is associated with a L (and thus in such cases must associate with the vowel that precedes the neutralized vowel); and (d) there is a rule of Fall Simplification that has, roughly, the form given in (22).

- (22) FS      H (H) L      condition: the preceding vowel is associated with a H
- 

where the symbol † means that the association line in question is to be deleted. (22) utilizes the parentheses notation and thus abbreviates the two rules given in (23).

- (23) a.      H H L      condition: as in (22)
- 
- b.      H L      condition: as in (22)
- 

Given a representation like

H H L  
\$ni-a-san-a\$

subrule (23a) will delete the association line between the first H and the neutralized vowel while subrule (23b) will delete the association line between the second H and the neutralized vowel.

### 3.2. The imperative.

In this section, I will examine some aspects of the tonal structure of the imperative in Digo. This form has neither a subject prefix nor a tense prefix. The final vowel is -a when there is no object prefix present or when the OP is the 1 sg. -ni-, otherwise the final vowel is -e. The suffix -ni is added to indicate a plural subject. Although I will give the pl. imp. forms when I cite data, these forms are problematic in certain respects and I will not attempt to give an account of them. The reader will perhaps recall that the locative suffix -ni also yielded some problematic forms; there may well be a connection between the two sets of data. In (24) † illustrate the imperative of a low-toned verb--namely, -tsukur- 'carry'.



- (24)    tsukur-a            'carry!'  
          ni-tsukur-a        'carry me!'  
          a-tsukûr-e        'carry them!'
- tsukur- $\overset{\vee}{\underset{\wedge}{a}}$ -ni            'pl. carry!'  
          ni-tsukur- $\overset{\vee}{\underset{\wedge}{a}}$ -ni            'pl. carry me!'  
          a-t $\overset{\vee}{\underset{\wedge}{s}}$ ukûr- $\overset{\vee}{\underset{\wedge}{e}}$ -ni            'pl. carry them!'

The key to understanding the imperative construction, tonally-speaking, is provided by the example a-tsukûr-e. The 3 pl. OP -a- is high-toned. In order to account for the high-fall on the penult vowel of this example, we must assume that the stem contains a H that fails to undergo HTD and instead is converted to L by Neutralization. In other words, the verb must have a H associated with its penult vowel (given my suggestion earlier that only penult vowels undergo Neutralization). The derivation of a-tsukûr-e can be seen in (25).

- (25)
- |    |              |             |
|----|--------------|-------------|
| H  | H            |             |
| \$ | a            | -tsukûr-e\$ |
|    | inapplicable | HE          |
|    | inapplicable | HTD         |
| H  | L            |             |
| a  | -tsukûr-e    | Neut        |
|    | inapplicable | HD          |
| H  | L            |             |
| a  | -tsukûr-e    | D-NV        |
|    | inapplicable | D-S         |
|    | inapplicable | HTS         |
|    | inapplicable | FS          |
|    | inapplicable | Rise-Fall   |
|    | inapplicable | UFL         |

If this derivation of a-tsukûr-e is accepted, then we have critical evidence in support of our claim that D-NV is a distinct rule from D-S. Notice that the prefix H in this derivation does not associate with the first stem vowel (as it does in the case of D-S), but rather with the neutralized vowel. I assume, therefore, that the rule D-NV must have the form given in (26).

- (26)
- |   |   |   |     |   |   |
|---|---|---|-----|---|---|
| H |   | L |     | H | L |
|   | X |   | ==> |   |   |
| V |   | V |     | V | X |
|   |   |   |     | \ | / |
- (where X = any segmental material whatever)

Of course, this formulation is not fully adequate, since we have seen earlier (cf. a-nâ-vug-a 'he is cooking') that the presence of a voiced obstruent in front of the neutralized vowel causes the H to associate with the antepenult vowel instead of the neutralized vowel. But before we consider how (26) should be modified to take this fact into account, more data needs to be assembled. Since (26) is triggered by the presence of a L, the rule that creates this L--namely, Neut--must be applied before D-NV. I have assumed that D-NV precedes D-S. The motivation for this is simply that if a structure satisfies the conditions for both rules, it is D-NV that applies. However, it is possible that one might be able to allow D-S to apply first to associate a H with the first stem vowel, and then allow D-NV to operate on that output and move the H again, this time to the neutralized vowel. I prefer the simpler derivation where just D-NV will apply.

The preceding analysis suggests that the imperative morphology supplies a H to the penult vowel (since in the lexicon *-tsukur-* is low-toned, the H must come from the morphology rather than from the lexicon). This H fails to undergo HTD, but does undergo Neut. In *a-t<sup>h</sup>uk<sup>h</sup>ur-e* there is a preceding H in the word that can displace to the neutralized vowel; no such H is present in *tsukur-a* and *ni-t<sup>h</sup>sukur-a*, consequently the only rule that applies in these forms is Neut.

- |      |              |                    |  |                        |
|------|--------------|--------------------|--|------------------------|
| (27) | vumikiz-a    | 'say yes!'         | vumikiz- <sup>h</sup> a-ni <sup>h</sup>    | 'pl. say yes!'         |
|      | ni-vumikiz-a | 'say yes to me!'   | ni-vumikiz- <sup>h</sup> a-ni <sup>h</sup> | 'pl. say yes to me!'   |
|      | ã-vumikiz-e  | 'say yes to them!' | ã-vumikiz- <sup>h</sup> ẽ-ni <sup>h</sup>  | 'pl. say yes to them!' |

Consider the form *ã-vumikiz-e*. The H associated with the OP *-a-* is manifested on the prefix. It does not displace to the neutralized vowel. It would seem that the failure of D-NV to move the H from the prefix must be attributed to the fact that a voiced obstruent intervenes. This would suggest that the proper formulation of D-NV is as in (28),

- |      |   |   |   |       |   |   |   |
|------|---|---|---|-------|---|---|---|
| (28) | H |   | L |       | H |   | L |
|      | ↓ |   |   | ====> |   |   |   |
|      | V | X | V |       | V | X | V |

(where X=maximal number of segments not containing a voiced obstruent)

(Note that this rule requires that a L follows the H, but does not specify which vowel in the segmental tier that L is associated with.) There is a problem with this formulation of D-NV that will arise in section 4, but the present data motivate the specifications given in (28).

The derivation of *ã-vumikiz-e* is shown in (29).

- |      |              |           |  |
|------|--------------|-----------|--|
| (29) | H            | H         |  |
|      | ã-vumikiz-e  |           |  |
|      | inapplicable | HE        |  |
|      | inapplicable | HTD       |  |
|      | H            | L         |  |
|      | ã-vumikiz-e  | Neut      |  |
|      | inapplicable | HD        |  |
|      | inapplicable | D-NV      |  |
|      | inapplicable | D-S       |  |
|      | inapplicable | HTS       |  |
|      | inapplicable | FS        |  |
|      | inapplicable | Rise-Fall |  |
|      | inapplicable | UFL       |  |

Consider next the case of a low-toned verb stem with a stem-medial voiced obstruent.

- |      |              |                  |  |                      |
|------|--------------|------------------|--|----------------------|
| (30) | rejezer-a    | 'soak for!'      | rejezer- <sup>h</sup> a-ni <sup>h</sup>    | 'pl. soak for!'      |
|      | ni-rejezer-a | 'soak for me!'   | ni-rejezer- <sup>h</sup> a-ni <sup>h</sup> | 'pl. soak for me!'   |
|      | a-rẽjezer-e  | 'soak for them!' | a-rẽjezer- <sup>h</sup> ẽ-ni <sup>h</sup>  | 'pl. soak for them!' |

These data illustrate that D-NV cannot displace a H past the first voiced obstruent between the vowel with which the H is associated and a neutralized vowel. Thus in a-réjezer-e, the prefix H displaces to the first stem vowel since it is blocked from associating any further to the right by the voiced obstruent j. The formulation of D-NV given in (28) thus finds additional confirmation.

So far I have illustrated only the behavior of low-toned verbs. In (31) I illustrate a high-toned verb.<sup>13</sup>

- |      |            |              |   |                  |
|------|------------|--------------|---|------------------|
| (31) | Birik-a    | 'send it!'   | Birik- $\checkmark$ -á-ní $\hat{\text{H}}$    | 'pl. send it!'   |
|      | ni-Birik-a | 'send me!'   | ni-Birik- $\checkmark$ -á-ní $\hat{\text{H}}$ | 'pl. send me!'   |
|      | a-Birik-e  | 'send them!' | a-Bírík-é-ní $\hat{\text{H}}$                 | 'pl. send them!' |

These examples parallel precisely the data in (24)--suggesting that perhaps in the imperative the lexical tone specification is deleted and a H is assigned to the penult vowel for all verbs. Further support for this proposed merger between high- and low-toned verbs is found in (32).

- |      |             |                 |  |                     |
|------|-------------|-----------------|--|---------------------|
| (32) | vwinir-a    | 'sing to!'      | vwinir- $\checkmark$ -á-ní $\hat{\text{H}}$    | 'pl. sing to!'      |
|      | ni-vwinir-a | 'sing to me!'   | ni-vwinir- $\checkmark$ -á-ní $\hat{\text{H}}$ | 'pl. sing to me!'   |
|      | á-vwinir-e  | 'sing to them!' | á-vwinir-é-ní $\hat{\text{H}}$                 | 'pl. sing to them!' |

These data parallel precisely the low-toned verb -vumikiz- illustrated in (27).

Although my available data is unfortunately skimpy on this particular point, there is some evidence that the lexical H associated with the first vowel of a high-toned stem is lost only in cases where the first stem vowel is the vowel that precedes the penult vowel. Consider the data in (33).

- |      |                |                  |   |                      |
|------|----------------|------------------|---|----------------------|
| (33) | chekecher-a    | 'sift for!'      | chekecher- $\checkmark$ -á-ní $\hat{\text{H}}$    | 'pl. sift for!'      |
|      | ni-chekecher-a | 'sift for me!'   | ni-chekecher- $\checkmark$ -á-ní $\hat{\text{H}}$ | 'pl. sift for me!'   |
|      | a-chékécher-e  | 'sift for them!' | a-chékécher-é-ní $\hat{\text{H}}$                 | 'pl. sift for them!' |

I suggest that the underlying representation of a-chékécher-e is

$$\begin{array}{c} \text{H} \quad \text{H} \quad \text{H} \\ \text{\$}\check{\text{a}}\text{-ch}\check{\text{e}}\text{k}\check{\text{e}}\text{c}\check{\text{h}}\text{e}\text{c}\check{\text{h}}\text{e}\text{r}\text{-e}\text{\$} \end{array}$$

and that the lexical H associated with the first vowel of -chekecher- has not been deleted since there is a vowel between it and the penult H. The correct surface form can be obtained by means of the rules that we have already posited. The derivation is given in (34).

- |      |  |      |
|------|--|------|
| (34) | $\begin{array}{c} \text{H} \quad \text{H} \quad \text{H} \\ \text{\$}\check{\text{a}}\text{-ch}\check{\text{e}}\text{k}\check{\text{e}}\text{c}\check{\text{h}}\text{e}\text{c}\check{\text{h}}\text{e}\text{r}\text{-e}\text{\$} \end{array}$ |      |
|      | inapplicable   | HE   |
|      | inapplicable   | HTD  |
|      | $\begin{array}{c} \text{H} \quad \text{H} \quad \text{L} \\ \text{\$}\check{\text{a}}\text{-ch}\check{\text{e}}\text{k}\check{\text{e}}\text{c}\check{\text{h}}\text{e}\text{c}\check{\text{h}}\text{e}\text{r}\text{-e} \end{array}$          | Neut |
|      | inapplicable   | HD   |
|      | $\begin{array}{c} \text{H} \quad \text{H} \quad \text{L} \\ \text{\$}\check{\text{a}}\text{-ch}\check{\text{e}}\text{k}\check{\text{e}}\text{c}\check{\text{h}}\text{e}\text{c}\check{\text{h}}\text{e}\text{r}\text{-e} \end{array}$          | D-NV |
|      | $\begin{array}{c} \text{H} \quad \text{H} \quad \text{L} \\ \text{\$}\check{\text{a}}\text{-ch}\check{\text{e}}\text{k}\check{\text{e}}\text{c}\check{\text{h}}\text{e}\text{c}\check{\text{h}}\text{e}\text{r}\text{-e} \end{array}$          | D-S  |
|      | $\begin{array}{c} \text{H} \quad \text{H} \quad \text{L} \\ \text{\$}\check{\text{a}}\text{-ch}\check{\text{e}}\text{k}\check{\text{e}}\text{c}\check{\text{h}}\text{e}\text{c}\check{\text{h}}\text{e}\text{r}\text{-e} \end{array}$          | HTS  |

H	L	
a- <sup>^</sup> ch <sup>^</sup> ek <sup>^</sup> ech <sup>^</sup> er-e		FS
inapplicable		Rise-Fall
inapplicable		UFL

There is one problem with the above derivation that requires mention--namely, D-S disassociates a H from the object prefix and reassociates it with the first vowel of the verb stem -chekecher-. In K&W it was shown that, for purposes of D-S, an OP counts as part of the verb stem. Thus a H associated with a subject prefix or with a tense prefix will reassociate with the OP rather than with the first vowel of the verb stem proper. Thus it would seem that in (34) we do not really expect the H on the OP to leave the OP at all. But the facts are clear. A H associated with an OP displaces (by D-S) off that prefix onto the stem proper, whereas a H associated with the SP or the tense prefix will displace (by D-S) onto the OP. The -ni forms like a-tsúkúr-é-ni and a-Bírík-é-ni apparently illustrate the same point, but since I haven't provided a full analysis of these forms they cannot safely be invoked here.

If the derivation in (34) is valid, then it provides additional support for the existence of the rule Fall Simplification. It is FS that accounts for the fact that a-chékêcher-e has undergone Neut and D-S (followed by HTS), but that there is no surface trace of D-NV.

### 3.3. The present negative.

The tonal structure of the present negative parallels the imperative and thus provides further confirmation of observations made in the preceding section. The morphology is somewhat complicated. I give a sample paradigm for a low-toned verb in (35).

(35)	si-tsukúr-a	'I'm not taking, carrying'
	ku-tsukúr-a	'you're not...'
	ka-tsukúr-a	'he's not...'
	ta-u-tsukúr-a	'we're not...'
	ta-mu-tsukúr-a	'you pl. aren't...'
	ta-a-tsukúr-a	'they aren't...'

The crucial point here is the high-falling tone on the penult vowel. Given the analysis of the imperative, the analysis of this paradigm quickly takes shape. The present negative must involve a H associated with the penult vowel. In addition, there must be another H located before the penult H. Where that other H is located can be seen from the paradigm in (36).

(36)	sí-vugur-a	'I'm not untying'
	kú-vugur-a	etc.
	kā-vugur-a	
	ta-ú-vugur-a	
	ta-mú-vugur-a	
	ta-ā-vugur-a	

Clearly, there is a H before the verb stem. The H could be regarded as being underlyingly associated either with the negative element or the subject prefix (in the singular forms, these two constituents are fused together in any case)--I will arbitrarily assume that it is the SP that bears the H. The analysis

that I have developed predicts, correctly, that the H associated with the SP will not be able to displace to the neutralized vowel in (36) due to the presence of a voiced obstruent in stem-initial position.

If an OP is inserted before the stem *-vugur-*, the H of the SP will displace to the OP, although it can go no further than that due to the voiced obstruent following the OP. Cf. the paradigm in (37).

- (37) ta-a-ní-vugur-a 'they are not untying me'  
 ta-a-ú-vugur-a 'they are not untying us'

That the H of the SP will displace as far toward the neutralized vowel as possible is shown by the data in (38):

- (38) ka-ni-tōgor-a 'he's not praising me'  
 ka-ku-tōgor-a 'he's not praising you sg.'  
 ka-mu-tōgor-a 'he's not praising him'  
 ka-u-tōgor-a 'he's not praising us'  
 etc.

In these examples, there is no voiced obstruent until just before the neutralized vowel; therefore, the H of the SP is able to associate with the antepenult vowel. It should be noted, incidentally, that although ordinarily there are some low-toned object prefixes and some high-toned object prefixes, in the negative present all object prefixes behave as though they are low-toned. I will not attempt to account for this behavior here.

The behavior of lexical high-toned verbs in the present negative is parallel to the behavior of such verbs in the imperative. If the stem is of the shape  $-C_0VC_0VC_0-a$ , no trace of the lexical H can be found on the surface.

- (39) si-pupút-a 'I'm not beating'  
 ku-pupút-a etc.  
 ka-pupút-a  
 ta-u-pupút-a  
 ta-mu-pupút-a  
 ta-a-pupút-a

This paradigm parallels precisely the forms in (35) based on the low-tone verb *-tsukur-*. But compare (40).

- (40) si-tányíríz-a 'I'm not driving off predators'  
 ku-tányíríz-a etc.  
 ka-tányíríz-a  
 ta-u-tányíríz-a  
 ta-mu-tányíríz-a  
 ta-a-tányíríz-a

Here, where the first stem vowel is separated from the neutralized vowel by another vowel, we find evidence that the lexical H has been retained. The derivation of these forms will be exactly like the derivation of the imperative form *a-chékécher-e* given in (34). Unfortunately, the available data for high-toned verb stems with three or more vowels is skimpy and thus it is not possible (at present) to investigate the behavior of such stems fully.

4. Noun plus verb phrases.

Although a complete study of the tonology of Digo sentences is absolutely essential to an adequate understanding of Digo tone, I have sufficient materials to explore in detail just one sort of phrase, namely, those consisting of a verb plus a single (unmodified) noun. Such phrases, however, shed considerable light on the workings of tone in Digo.

4.1. Phrases involving verb words with no high tones.

I consider first phrases involving verbal forms that lack any high tones. Verbal forms of this type are: (a) low-toned verbs in the infinitive when no high-toned OP is present, and (b) low-toned verbs in the present or future when the SP is 1p. or 2p. and there is no high-toned OP. In (41) I illustrate the case when a low-toned noun follows, in (42) the case when a high-toned noun subject to Neut follows, and in (44) the case when a high-toned noun that undergoes HTD follows.

- (41) ku-gur-a ṅombe 'to buy a cow'  
 ku-henz-a mu-ganga 'to look for a doctor'  
 ku-sag-a mu-hama 'to grind millet'  
 ni-na-pig-a goma 'I'm beating a drum'  
 ni-na-guw-a tunda 'I'm peeling a fruit'  
 ku-ni-gurir-a n-guwo 'to buy clothes for me'
- (42) ku-takas-a ny-ungu 'to clean a pot'  
 ku-rand-a chi-tanda 'to spread a bed'  
 ni-na-jit-a vi-yogwe 'I'm cooking sweet potatoes'  
 ni-na-gur-a shoka 'I'm buying an axe'
- (43) ku-sag-a ma-pembá 'to grind maize' (cf. ma-pembá 'maize')  
 ku-vugur-a fundó 'to untie a knot' (cf. fundó 'knot')  
 ku-andik-a chi-tábu 'to write a book' (cf. chi-tábu 'book')  
 ni-na-tsor-a chi-dáfu 'I'm picking a young coconut' (cf. chi-dáfu 'young coconut')  
 ni-na-vugur-a fundó 'I'm untying the knot'

Examination of the data in (41)-(43) establishes that after a verb which contains no H's in its underlying structure, a noun is pronounced exactly as it is in its isolation form. The noun is in no way affected by being preceded by a low-toned verb.<sup>14</sup>

4.2. Phrases involving verb words with one high tone.

Next I turn to phrases where the verb word contains a single H in its underlying structure. Examples of this sort include: (a) low-toned verb stems in the infinitive or in the 1/2p. present or future tense provided there is a high-toned OP present; (b) a high-toned verb stem in the infinitive or in the 1/2p. present or future tense; (c) a low-toned verb stem in the 3p. present or future tenses, if no high-toned OP is present; and (d) a low-toned verb stem in the -ka- or the -chi- tense. In (44), I give examples of low-toned nouns after such verbs.

- (44) ku-onyes-a n-jira 'to show the way' (cf. ku-onyes-ā, n-jira)  
 ku-afun-a ny-ama 'to chew meat' (cf. ku-afun-ā, ny-ama)  
 ku-anik-a n-gūwō 'to put clothes in sun to dry' (cf. ku-anik-ā, n-guwo)  
 ni-na-ezek-a banda 'I'm thatching a shed' (cf. ku-ezek-ā, banda)  
 ni-na-reh-a chi-gwāzo 'I'm bringing a peg' (cf. ku-rēh-ā, chi-gwazo)  
 ni-na-chekech-a u-ngā 'I'm sifting flour' (cf. ku-chekech-ā, u-nga)  
 ni-na-ādz-a mū-tū 'I'm mentioning by name' (cf. ku-ādz-a, mū-tu)  
 a-na-henz-a mu-gāngā 'he's looking for a doctor' (cf. ku-henz-a, mu-ganga)  
 a-na-jit-a māngā 'he's cooking cassava' (cf. ku-jit-a, manga)  
 a-na-pīg-a gōmā 'he's beating a drum' (cf. ku-pig-a, goma)  
 a-na-ragīz-a kalāmū 'he's ordering a pen' (cf. ku-ragiz-a, kalamu)  
 a-ka-gur-a n-gūwō 'he has bought clothes' (cf. ku-gur-a, n-guwo)  
 a-ka-jit-a mā-zu 'he has cooked bananas' (cf. ku-jit-a, ma-zu)  
 a-ka-ragīz-a kalāmū 'he has ordered a pen' (cf. ku-ragiz-a, kalamu)

There are two immediately striking facts about the data in (44). First, the low-toned nouns are pronounced just like nouns that have a high tone that has been displaced to the ultimate vowel. Second, the verbs are (for the most part--and herein lies a very interesting story) pronounced as though they have no H associated with them. In other words, it seems as though the verb gives up its H to the following low-toned noun!

The analysis of this phenomenon is fairly obvious. Namely, all that we need to do is assume that the rule of HTD operates on phrases as well as words. HTD will say that the rightmost H of the input representation (whether that representation be a single word or a phrase) is associated with the ultimate vowel in the representation. Given an input such as

H  
 \$ā-na-henz-a mu-ganga\$

HTD will associate the prefix H with the ultimate vowel of the noun. Rise-Fall will then apply to derive the correct surface form.

There is one significant question that must be raised with respect to this analysis of the data in (44). Does the rule HTD operate once on the entire phrase, or does it operate twice--first on the verb word, and then again to the phrase consisting of the verb plus following noun? Given a structure such as that cited above, either approach would achieve the correct results. If HTD applies once, it takes the prefix H directly to the last vowel of the noun. If HTD applies twice, it first of all takes the prefix H to the last vowel of the verb and then reapplies to associate it with the last vowel of the phrase. In either case, the prefix H ends up on the last vowel of the phrase.

Evidence in favor of saying that HTD applies in some sort of cyclic fashion (first to the verb, and then again to the phrase) is provided by examples like a-na-pīg-a gōmā, a-na-ragīz-a kalāmū, and ni-na-ādz-a mū-tū. Although in underlying structure these phrases contain just a single H--originating on the 3 sg. subject prefix in the first two examples and on the verb stem in the last example, the surface forms clearly reflect two

high tones. In section 1, I suggested a rule that these forms provide crucial evidence for--namely, the rule of High Doubling. This rule says that a H on an ultimate vowel that is preceded by a voiced obstruent will double onto the preceding vowel. The effect of this rule is to yield an output with two H's from an input with just one H. This, of course, is just the result required in order to account for their being two high tones in such phrases as a-na-pig-a goma but just a single high tone in phrases like a-na-gur-a n-guwo.

We must now turn our attention to precisely how a form like a-na-pig-a goma is to be derived. HD is triggered by a H on an ultimate vowel that is preceded by a voiced obstruent. Thus, given the structure

$$\begin{array}{c} \text{H} \\ | \\ \$\text{a-na-pig-a n-guwo}\$ \end{array}$$

the only way that we can get HD to apply is by somehow getting the prefix H to associate with the ultimate vowel of the verb word. There is a rule that would do this, of course--namely, HTD. But the fact that HTD must move the prefix H to the end of the verb means that HTD cannot be a rule that applies just once, to the whole phrase, rather it must apply first just to the verb itself and then again to the whole phrase. In other words, it is essential that HTD be cyclic. Furthermore, it is necessary that HD be cyclic as well, since HD must apply while there is still a H associated with the ultimate vowel of the verb, even though that H will eventually be displaced to the ultimate vowel of the following noun. If these two rules (at least) are cyclic, we can obtain the correct derivation, as shown in (45).<sup>15</sup>

(45)	$\begin{array}{c} \text{H} \\   \\ \$\text{[a-na-pig-a\#][\#goma\#]}\$ \end{array}$		<u>first cycle</u>	
	$\begin{array}{c} \text{H} \\   \\ \text{a-na-pig-a} \end{array}$	inapplicable	HTD	
	$\begin{array}{c} \text{H} \quad \text{H} \\   \quad   \\ \text{a-na-pig-a} \end{array}$	inapplicable	HD	
	$\begin{array}{c} \text{H} \quad \text{H} \\   \quad   \\ \$ \text{a-na-pig-a} \end{array}$	goma	\$	<u>second cycle</u>
	inapplicable			HE
	$\begin{array}{c} \text{H} \\   \\ \text{a-na-pig-a} \end{array}$	goma		HTD
	inapplicable			Neut
	inapplicable			HD
	inapplicable			D-NV
	inapplicable			D-S
	inapplicable			HTS
	inapplicable			FS
	$\begin{array}{c} \text{H} \\   \\ \text{a-na-pig-a} \end{array}$	$\begin{array}{c} \text{L} \quad \text{H} \quad \text{L} \\ \diagup \quad \diagdown \\ \text{goma} \end{array}$		Rise-Fall
	inapplicable			UFL

I conclude, then, from this sort of example that there is a cyclic application of at least HTD and HD. The issue of the possible cyclic application of the other rules will be examined as I proceed through additional data.



In (44) I gave just examples where the H on the verb word would undergo HTD if the verb word were pronounced in isolation. In (45) I give examples where the H on the verb word would not undergo HTD (but instead would be subject to Neut) if the verb word were pronounced in isolation. The noun that follows is, again, a low-toned noun.

- (46) ku-heg-a n-guruwe<sup>V</sup> 'to trap a pig' (cf. ku-heg-a, n-guruwe)  
 ku-heg-a n-jiya<sup>V</sup> 'to trap a pigeon' (cf. n-jiya)  
 ku-ih-a mu-ganga<sup>V</sup> 'to call a doctor' (cf. ku-ih-a, mu-ganga)  
 ni-na-Bah-a ma-tunda<sup>V</sup> 'I'm getting fruit' (cf. ku-Bah-a, ma-tunda)  
 ni-na-vug-a w-ari<sup>V</sup> 'I'm cooking rice' (cf. ku-vug-a, w-ari)  
 ni-na-tsun-a njombe<sup>V</sup> 'I'm skinning a cow' (cf. ku-tsun-a, njombe)

The most striking fact about these data is that the rule of Neutralization has not applied to change the H of the verb stems to L. The H remains, eventually getting displaced (via HTD) to the ultimate vowel of the noun. The most straightforward way of accounting for the fact that Neut has failed to apply to the vowel of the verb stem in these examples is to formulate Neut so that it applies not to the penult vowel of any word, but rather to the penult vowel in certain syntactic constructions. Thus Neut would affect a verb word when its the final word in a verb phrase, but not when it is medial in a verb phrase, etc. Much work on the syntax of Digo will be required before I can state precisely the environments where Neut applies (though preliminary data does show that it is not simply applicable to the penult vowel of an utterance), and I will have nothing more to say on this topic here.

The attentive reader may have wondered why, in section 1, I chose to disassociate the failure of stems like -heg-, -ih-, -vug- to undergo HTD from the fact that their underlying H gets changed to L by Neut. That is, why did I put a restriction on the rule of HTD (preventing it from affecting penult H's that originate in the stem) and claim that this restriction is independent of the fact that these same H's will be changed to L's by the rule of Neut. It might have appeared more plausible to claim that it is the fact that the H of these verbs is changed to L that makes HTD inapplicable. The motivation for making the failure of HTD to apply to these verb stems independent of whether their H changes to L comes from an example like ku-heg-a n-guruwe. The underlying structure of this phrase is:

$$\begin{array}{c} \text{H} \\ \$ [ [\# \text{ku-heg-a} \# ] [ \# \text{n-guruwe} \# ] ] \$ \end{array}$$

Given the analysis that I have suggested, HTD will not be applicable on the first cycle to the verb word. Since HTD does not apply, High Doubling cannot apply either. Thus at the end of the first cycle, the verb word will not have undergone any changes. On the second cycle, HTD will associate the H on the verb word with the ultimate vowel of the phrase. (Recall, HTD is prevented from applying to penult H's originating in the stem, but on the second cycle the verb H is not associated with the penult vowel in the input representation, thus it will be susceptible to HTD.) Rise-Fall will then produce the correct surface form.

But suppose that instead of the analysis I have adopted we claimed that HTD fails to apply just in case Neut applies. It would then follow that since Neut does not apply in the phrase under consideration that HTD should apply to the verb word on the first cycle. But if HTD applies on the first cycle, High Doubling will also be triggered, and we will obtain the incorrect surface form \*ku-hég-a n-guruwé. In order to avoid this incorrect form, we must guarantee that HD does not apply to the verb word; in order to guarantee that, we must guarantee that HTD does not apply to the verb word. But since Neut is not involved in this derivation, the failure of HTD to apply to the verb must have nothing directly to do with the application of Neut. Thus I conclude that while there is obviously a close connection between the fact that H's which do not undergo HTD are susceptible to Neut (I have expressed this connection by restricting Neut to penult H's--and only H's that have escaped HTD can be in this environment), the present data show that this connection is not to be expressed by making the failure of HTD contingent upon the application of Neut.<sup>16</sup>

Having established that there is some motivation for my proposed treatment of Neutralization (and its relation to HTD), let me turn to phrases involving a verbal word with a single H in its underlying structure followed by a noun that contains a H that is subject to Neut rather than HTD. Examples are given in (47).

- (47) ku-afun-a názi 'to chew a coconut' (ku-afun-á, nazi)  
 ku-azim-a shóka 'to borrow an axe' (ku-azim-á, shoka)  
 ku-ar-á demu 'to take a rag' (ku-ar-á, demu)  
 ku-ar-a chí-demu 'to take a small rag' (chí-demu)  
 ku-ádz-á dzina 'to call by name' (ku-ádz-a, dzina)
- a-na-jit-a ma-rénje 'he is cooking pumpkins' (ku-jit-a, ma-renje)  
 a-na-gur-a shóka 'he is buying an axe' (ku-gur-a)  
 a-na-andik-a chí-tánda 'he is making a bed' (ku-andik-a, chí-tanda)  
 a-na-andik-a baruwa 'he is writing a letter' (ku-andik-a, baruwa)  
 a-na-tsong-a gungúhi 'he is cutting a bedleg' (ku-tsong-a, gunguhi)  
 a-na-angamíz-a pèsa 'he is losing money' (ku-angamiz-a, pesa)  
 a-na-vuv-a má-zobe 'he is fishing for crabs' (ku-vuv-a, ma-zobe)
- a-ka-jit-a vi-yogwe 'he has cooked sweet potatoes' (vi-yogwe)  
 a-ka-jit-a m-barázi 'he has cooked sp. beans' (m-barazi)  
 a-ka-jit-á dzungu 'he has cooked sp. pumpkin' (dzungu)  
 a-ka-jit-a má-dzungu 'he has cooked sp. pumpkins' (ma-dzungu)

Each of the verb words in (47) has a H associated with it, and in every case this H is one that is susceptible to HTD. Assuming that HTD is cyclic, the H of the verb word will become associated with the last vowel of the verb word on the first cycle. The noun words also have a H associated with them, but these H's are restricted from undergoing HTD--thus at the end of the first cycle this H will still reside on the penult vowel of these nouns. (I am assuming that this H cannot be affected by Neut on the first cycle due to the fact that at this point, the location of the noun in the phrase is not yet determined. Neut affects just penult vowels in certain syntactic positions.) After the first cycle, then, we will have structures like the following:

$\begin{array}{c} \text{H} \quad \text{H} \\ \text{\$ku-afun-}\hat{\text{a}} \quad \text{n}\hat{\text{a}}\text{zi}\text{\$} \end{array}$   
 $\begin{array}{c} \text{H} \quad \text{H} \\ \text{\$a-na-jit-}\hat{\text{a}} \quad \text{ma-renje}\text{\$} \end{array}$   
 $\begin{array}{c} \text{H} \quad \text{H} \\ \text{\$a-na-tsong-}\hat{\text{a}} \quad \text{gung}\hat{\text{u}}\text{hi}\text{\$} \end{array}$   
 $\begin{array}{c} \text{H} \quad \text{H} \\ \text{\$a-na-vuw-}\hat{\text{a}} \quad \text{ma-z}\hat{\text{o}}\text{be}\text{\$} \end{array}$

In order to account for the high-falling tone on the noun in examples such as ku-afun-a nâzi, we must appeal to the rule D-NV. We know that this rule has the effect of associating a H with a neutralized vowel--and we know that the nouns in (47) are subject to Neutralization. But if we are going to appeal to D-NV, then it must be the case that D-NV is a rule that operates on phrases and not just words. In other words, a H associated with a verb can displace to a neutralized vowel in the following noun. It is also clear from these data that D-NV must be a distinct rule from D-S, since displacement is to the neutralized vowel not to the first stem vowel in an example like a-na-tsong-a gungûhi or a-na-andik-a barûwa.

There is one significant problem with respect to invoking D-NV to account for these data--and that has to do with the role of voiced obstruents in inhibiting this displacement. It is clear from (47) that if the neutralized vowel is preceded by a voiced obstruent, the displaced H ends up on the vowel in front of the voiced obstruent. The vowel in front of the voiced obstruent could be the final vowel of the verb, as in a-ka-jit-â dzungu, or it could be a prefix vowel, as in a-na-vuw-a mâ-zobe, or presumably it could be another stem vowel (although I do not have a relevant example at my disposal). The problem is that in section 3, there was evidence that a voiced obstruent anywhere between the H and the neutralized vowel stopped the movement of the H. My formulation of D-NV in (28) reflected this inhibiting factor. But notice that in a-na-tsong-a gungûhi and a-na-andik-a barûwa the voiced obstruent at the beginning of the noun stem does not prevent the H on the verb from crossing over to the neutralized vowel. In the case of nouns, it is only a voiced obstruent that immediately precedes the neutralized vowel that causes the H to associate with the vowel in front of the voiced obstruent. Why nouns and verbs should behave differently in this respect, I have no explanation for, and I have not attempted to reformulate D-NV so as to formalize this difference in behavior.

The data in (47) provide additional cases where both HTD and HD apply on the first cycle to the verb word--cf. ku-âdz-â dzina and a-na-angamîz-a pësa. In these examples, the doubled H on the penult vowel of the verb remains attached to that vowel while the H on the ultimate vowel of the verb is displaced to the neutralized vowel (if it can be).

I turn now to the tonal pattern of phrases consisting of a verb word with a single H in its underlying structure followed by a noun that contains a H that undergoes HTD (and thus does not undergo Neut). Examples are given in (48).

- (48) ku-anik-a ma-pěmbá<sup>^</sup> 'to put maize in the sun to dry'  
 (cf. ku-anik-á, ma-pěmbá<sup>^</sup>)
- ku-banang-a kándě<sup>^</sup> 'to spoil food'  
 (cf. ku-banang-á, kándě<sup>^</sup>)
- a-na-jit-a chi-kópwě<sup>^</sup> 'he is cooking sweet potato leaves'  
 (cf. ku-jit-a, chi-kópwě<sup>^</sup>)
- a-na-vugur-a fúndô<sup>^</sup> 'he is untying a knot'  
 (cf. ku-vugur-a, fúndô<sup>^</sup>)
- a-na-jit-á zôdo 'he is cooking mangos'  
 (cf. ku-jit-a, zôdo)
- a-na-tsor-a chí-dáfú<sup>^</sup> 'he is picking up a young coconut'  
 (cf. ku-tsor-a, chí-dáfú<sup>^</sup>)
- a-ka-fúj-a kándě<sup>^</sup> 'he has squandered food'  
 (cf. ku-fuj-a, kándě<sup>^</sup>)
- a-na-ragíz-a chi-tábu 'he is ordering a book'  
 (cf. ku-ragiz-a, chi-tábu)
- a-na-suw-a sáhání<sup>^</sup> 'he is washing plates'  
 (cf. ku-suw-a, sahání<sup>^</sup>)
- a-ka-angamíz-a rúmú<sup>^</sup> 'he has lost a knife'  
 (cf. ku-angamiz-a, rúmú<sup>^</sup>)
- ni-na-azim-a chi-kárángô<sup>^</sup> 'I am borrowing a frying pan'  
 (cf. ku-azim-á, chi-karángô<sup>^</sup>)
- ni-na-tem-á dāmú<sup>^</sup> 'I am spitting blood'  
 (cf. ku-tem-a has an underlying H that is neutralized, dāmú<sup>^</sup>)
- ni-na-tsun-a ñónzî<sup>^</sup> 'I am skinning a sheep'  
 (cf. ku-tsun-á has an underlying H that is neutralized, ñónzî<sup>^</sup>)

The most striking fact about the data in (48) is that the H associated with the verb in underlying structure has, for the most part, ended up on the following noun. In particular, it has ended up on the first vowel of the noun stem (hopping over the noun prefix in the process). The only cases where the H of the verb has not reached to the first vowel of the noun stem is when a voiced obstruent stands in the way. Thus (48) clearly involves the application of the rule of Displacement-to-Stem; (48) also shows that the rule must be able to apply to a phrase, not just to words.

Let me now illustrate how some of the items in (48) will be derived under the analysis proposed in the present paper. Consider, first, cases where D-S succeeds in displacing the H of the verb to the first stem vowel of the noun.

(49)	\$[[# <sup>H</sup> a-na-jit-a#][# <sup>H</sup> chi-kopwe#]]\$	<u>first cycle</u>
	a-na-jit-a <sup>H</sup> chi-kopwe <sup>H</sup>	HTD
	inapplicable      inapplicable	HD
	\$ a-na-jit-a <sup>H</sup> chi-kopwe <sup>H</sup> \$	<u>second cycle</u>
	inapplicable	HE
	inapplicable	HTD
	inapplicable	Neut
	inapplicable	HD
	inapplicable	D-NV
	a-na-jit-a <sup>H</sup> chi-kopwe <sup>H</sup>	D-S
	a-na-jit-a <sup>H</sup> chi-kopwe <sup>H</sup>	HTS
	inapplicable	FS
	inapplicable	Rise-Fall
	a-na-jit-a <sup>H</sup> chi-kopwe <sup>L</sup>	UFL

(I have assumed, arbitrarily, that in the case of the noun chi-kopwe, the underlying H is associated with the first vowel of the stem; I have no real evidence for this--all that we know for certain about nouns such as these is that their underlying H undergoes HTD and does not neutralize.)

The above derivation is quite straightforward and requires little in the way of comment. A number of other phrases in (48) will undergo a quite analogous derivation--e.g. ku-anik-a ma-pembá, ku-banang-a kándé, a-na-vugur-a fúndó, and ni-na-tsun-a nónzá. In examples such as a-na-suw-a sáhánt and ni-na-azim-a chi-kárángó, the only difference is that the rule of HTS does more work, since it spreads the H that is displaced onto the first stem vowel onto both the second stem vowel and also the final vowel. Examples such as a-ka-fúj-a kándé and a-ka-angamíz-a rúmú differ from (49) just in that the rule of HD is applicable to the verb on the first cycle, doubling the H that has been displaced to the ultimate vowel onto the penult vowel.

Consider next an example like a-na-ragíz-a chi-tábu. The derivation of this form is shown in (50).

(50)	\$[[# <sup>H</sup> a-na-ragiz-a#][# <sup>H</sup> chi-tábu#]]\$	<u>first cycle</u>
	a-na-ragiz-a <sup>H</sup> chi-tábu <sup>H</sup>	HTD
	a-na-ragiz-a <sup>H</sup> chi-tábu <sup>H</sup>	HD
	\$ a-na-ragiz-a <sup>H</sup> chi-tábu <sup>H</sup> \$	<u>second cycle</u>
	inapplicable	HE
	inapplicable	HTD
	inapplicable	Neut
	inapplicable	HD
	inapplicable	D-NV

$\begin{array}{c} \text{H} \quad \text{H} \\   \quad   \\ \text{a-na-ragiz-a} \quad \text{chi-tabu} \end{array}$	$\begin{array}{c} \text{H} \quad \text{H} \\   \quad   \\ \text{chi-tabu} \end{array}$	D-S
inapplicable		HTS
inapplicable		FS
inapplicable		Rise-Fall
$\begin{array}{c} \text{H} \quad \text{H} \\   \quad   \\ \text{a-na-ragiz-a} \quad \text{chi-tabu} \end{array}$	$\begin{array}{c} \text{H} \quad \text{L} \\   \quad   \\ \text{chi-tabu} \end{array}$	UFL

This derivation illustrates the case where, in the noun word, a voiced obstruent precedes the ultimate vowel and thus triggers HD on the first cycle. This process, combined with the rule of UFL, causes the noun to be pronounced with a level high tone on the penult vowel. The penult vowel here is also the first vowel of the noun stem. This means that when D-S takes the H on the verb and associates it with the first stem vowel of the noun, there will be no change in the pronunciation of the noun since it already has a H on the first stem vowel.

In all of the cases so far illustrated, D-S succeeds in reassociating the H of the verb with the first stem vowel of the noun. In (51), I illustrate the case where the presence of a voiced obstruent prevents the verb H from reaching the first stem vowel.

(51)	$\begin{array}{c} \text{H} \quad \text{H} \\   \quad   \\ \text{a-na-tsor-a} \quad \text{chi-dafu} \end{array}$	\$	$\begin{array}{c} \text{H} \\   \\ \text{chi-dafu} \end{array}$	\$	<u>first cycle</u>
	a-na-tsor-a		chi-dafu		HTD
	inapplicable		inapplicable		HD
	$\begin{array}{c} \text{H} \quad \text{H} \\   \quad   \\ \text{a-na-tsor-a} \quad \text{chi-dafu} \end{array}$	\$	$\begin{array}{c} \text{H} \\   \\ \text{chi-dafu} \end{array}$	\$	<u>second cycle</u>
	inapplicable		inapplicable		HE
	inapplicable		inapplicable		HTD
	inapplicable		inapplicable		Neut
	inapplicable		inapplicable		HD
	inapplicable		inapplicable		D-NV
	$\begin{array}{c} \text{H} \quad \text{H} \\   \quad   \\ \text{a-na-tsor-a} \quad \text{chi-dafu} \end{array}$		$\begin{array}{c} \text{H} \\   \\ \text{chi-dafu} \end{array}$		D-S
	inapplicable		inapplicable		HTS
	inapplicable		inapplicable		FS
	$\begin{array}{c} \text{H} \quad \text{L} \quad \text{H} \quad \text{L} \\   \quad   \quad   \quad   \\ \text{a-na-tsor-a} \quad \text{chi-dafu} \end{array}$		$\begin{array}{c} \text{L} \quad \text{H} \quad \text{L} \\   \quad   \quad   \\ \text{chi-dafu} \end{array}$		Rise-Fall
	inapplicable		inapplicable		UFL

In this case, the presence of the voiced obstruent at the beginning of the noun stem prevents the verb H from associating with the first stem vowel--it must associate instead with the preceding vowel. This voiced obstruent also prevents HTS from associating the H on the prefix with any following vowels. Other examples in (48) which have a parallel derivation are ni-na-tem-á damu and a-na-jit-á zódo (the latter form differing just in that the noun has a voiced obstruent before the ultimate vowel and thus triggers High Doubling and UFL rather than Rise-Fall).

## 4.3. Phrases involving verb words with two high tones.

Verb words that contain two high tones in their underlying structure include: (a) a high-toned verb stem in a 3p. present or future tense form; (b) a high-toned verb stem in a -ka- or -chi- tense form; and (c) a low-toned verb in the past tense. In (52) I illustrate phrases consisting of a verb with two highs followed by a low-toned noun.

- (52) a-na-chékéch-á ú-nga<sup>^</sup> 'he is sifting flour'  
(cf. ku-chékéch-á, u-nga)
- a-na-ádz-a mù-tu<sup>^</sup> 'he is mentioning s.o. by name'  
(cf. ku-ádz-a, mu-tu)
- a-na-tsíndz-á má-dzogoro<sup>^</sup> 'he is slaughtering roosters'  
(cf. ku-tsíndz-á, ma-dzogoro)
- a-na-ézek-a banda<sup>^</sup> 'he is thatching a shed'  
(cf. ku-ézek-á, banda)
- a-ka-tsúkúts-á chí-rónd-á<sup>^</sup> 'he has cleaned a wound'  
(cf. ku-tsúkúts-á, chí-ronda)
- a-ka-tsúkúts-á chí-dóndá<sup>^</sup> 'he has cleaned a wound'  
(cf. chí-donda is an alternative pronunciation to chí-ronda)
- a-ka-íh-á mú-gánga<sup>^</sup> 'he has called a doctor'  
(cf. ku-íh-a is a verb with an underlying H that gets neutralized when in the relevant environment; mu-ganga)
- a-ná-banang-a n-guwo<sup>^</sup> 'he is spoiling the cloth'  
(cf. ku-banang-á, n-guwo)
- n-á-gwir-a dzogoro<sup>^</sup> 'I caught a rooster'  
(cf. ku-gwir-a, dzogoro)
- n-a-héng-á mú-gánga<sup>^</sup> 'I looked for a doctor'  
(cf. ku-héng-a, mu-ganga)
- n-a-píg-a goma<sup>^</sup> 'I beat a drum'  
(cf. ku-píg-a, goma)

Let us consider first examples such as a-na-chékéch-á ú-nga<sup>^</sup> and a-ka-tsúkúts-á chí-róndá<sup>^</sup>. It seems quite apparent that one of the H's in the verb word has displaced to the first stem vowel in the verb word and spread onto all of the following vowels. But, if so, then it must be the case that HTS is a phrasal rule rather than one that is limited to the word since this spreading of high tones has gone not only all the way through the verb but also all the way through the noun.

A possible derivation for a-na-chékéch-á ú-nga<sup>^</sup> is given in (53).

(53) \$[ <sup>H</sup> a-na-chekech-a#][ <sup>H</sup> #u-nga#]]\$	<u>first cycle</u>	
<sup>H</sup> a-na-chekech-a	inapplicable	HTD
inapplicable	inapplicable	HD
\$ <sup>H</sup> a-na-chekech-a	u-nga	\$
inapplicable		<u>second cycle</u>
		HE
<sup>H</sup> a-na-chekech-a	<sup>H</sup> u-nga	HTD
inapplicable	inapplicable	Neut
inapplicable	inapplicable	HD
inapplicable	inapplicable	D-NV
<sup>H</sup> a-na-chékéch-a	<sup>H</sup> u-nga	D-S
<sup>H</sup> a-na-chékéch-a	<sup>H</sup> u-nga	HTS
inapplicable	inapplicable	FS
inapplicable	inapplicable	Rise-Fall
<sup>H</sup> a-na-chékéch-a	<sup>L</sup> u-nga	UFL

This derivation yields the correct surface form, but it is not the only possible way to achieve the correct result. In particular, it could very well be that D-S is cyclic and applies to the verb word on the first cycle. It could also be the case that HTS is cyclic. If so, it would apply both on the first cycle (extending the H that has been displaced to the first stem vowel onto the remaining vowels in the verb word) and on the second cycle (extending the H in the verb word onto the vowels in the noun).

It seems to me that the simplest assumption is that all of the rules are cyclic--although some of them may be inapplicable until a certain phrasal level has been reached. In particular, rules like Rise-Fall, Utterance-Final Lowering, and Neutralization are all applicable only relative to the end of certain syntactic constituents (the nature of which I have not yet fully explored). As a consequence, these rules will not be able to apply until the point where these constituents are being processed. One reason to consider Neut, particularly, to be in the cycle (even though it can only apply once, at a certain phrasal level) is that it must be ordered before the clearly cyclic rule of High Doubling.

Henceforth, I will assume that all of the rules participate in the cycle. The derivation of a-na-chékéch-á ú-nga<sup>^</sup> will now be as in (54).



(54)	\$[ <sup>H</sup> #[a-na-chekech-a#][ <sup>H</sup> #u-nga#]]	<u>first cycle</u>
	inapplicable	inapplicable HE
	<sup>H</sup> a-na-chekech-a	inapplicable HTD
	inapplicable	inapplicable Neut, HD, D-NV
	a-na- <sup>H</sup> chekech-a	inapplicable D-S
	<sup>H</sup> a-na-chekech-a	inapplicable HTS
	inapplicable	inapplicable FS, Rise-Fall, UFL
\$	a-na-chekech-a	<u>second cycle</u>
	inapplicable	HE
	<sup>H</sup> a-na-chekech-a	inapplicable HTD
	inapplicable	inapplicable Neut, HD, D-NV, D-S
	<sup>H</sup> a-na-chekech-a	inapplicable HTS
	inapplicable	inapplicable FS, Rise-Fall
	<sup>H</sup> a-na-chekech-a	inapplicable UFL

There is one aspect of the derivation in (54) that requires comment--namely, D-S must not apply on the second cycle to displace the H of the verb off the verb and onto the following noun. I assume that the reason that D-S does not apply on the second cycle to a H that has (on the first cycle) been displaced to the verb stem is that D-S does not displace across a stem vowel. More precisely, between the vowel to which the H is linked and the vowel to which it is displacing, there can be no vowel which belongs to a stem. This notion of not 'crossing' a stem vowel is rendered slightly more complicated under the assumption that HTS is cyclic, since when D-S attempts to apply on the second cycle in (54), the H of the verb word has gotten associated with three different vowels by virtue of HTS. The input to D-S is thus:

\$a-na-chekech-a <sup>H</sup> u-nga\$

Does a stem vowel intervene between the vowel that the H in the verb is linked to and the following noun stem? Yes, if we consider the H linked to the first vowel of *-chekech-*. No, if we consider the H linked to the final vowel of the verb. Consequently, it is necessary to state that no stem vowel may intervene between any of the vowels that the H is linked to and the vowel to which the H is displacing.

Examples such as a-na-chekech-a u-nga are interesting in that they can be used to provide another argument that HTD must be cyclic. Compare the preceding example with a-na-suw-a sahani. Their underlying forms are shown below:

<sup>H</sup>\$a-na-chekech-a <sup>H</sup> u-nga\$ vs. <sup>H</sup>\$a-na-suw-a <sup>H</sup> sahani\$

Notice that both have two H's in their underlying structure. Suppose that HTD is not cyclic, but rather applies just once to the whole phrase. Then

HTD will convert the above representations to:

$\overset{H}{\text{\$}}\overset{H}{\text{á}}\text{-na-chekech-a u-}\overset{H}{\text{ngá}}\text{\$}$ 
                         
  $\overset{H}{\text{\$}}\overset{H}{\text{á}}\text{-na-suw-a sahaní}\text{\$}$

But now we have a problem. Why does the H of the prefix in the former case displace to the verb stem, but in the latter example to the noun stem? There is no readily available answer to this question. The problem does not arise, however, if HTD is cyclic. In the case of a-na-chékéch-á ú-ngá, HTD will apply on the first cycle to the verb word and displace the stem high to the ultimate vowel. The prefix H will not be affected by HTD. In the case of a-na-suw-a sáhání, HTD will apply on the first cycle to the verb word and displace the prefix H to the ultimate vowel. But now we have achieved the desired contrast. For in the former example, since the H in the verb is on the verbal prefix, D-S can displace it only as far as the first vowel of the verb stem (since to go any further would involve crossing a stem vowel); while in the latter example, the H of the verb is on the ultimate vowel, and thus can displace to the first vowel of the noun stem (since this does not involve crossing any stem vowels). I conclude, then, that this contrasting behavior provides independent evidence for the cyclicity of HTD.

Let me now return to the other data in (52). The derivation of a number of these examples is entirely parallel to the derivation of a-na-chékéch-á ú-ngá except that HTS has been interrupted by a voiced obstruent (and since HTS has been stopped from reaching the ultimate vowel, it does not block the application of Rise-Fall). Examples of this sort: a-na-tsíndz-á má-dzogóró, a-na-ézek-a bándá, a-ka-tsúkúts-á chí-dóndá, a-ka-íh-á mú-gángá, and a-na-ádz-a mú-tú. In some cases the H of the prefix has not displaced to the verb stem because of the fact that a voiced obstruent precedes the first stem vowel--e.g. a-ná-banang-a n-guwo and n-á-gwir-a dzogóró. The derivations of these items are, however, entirely parallel to the examples cited immediately above.

I turn next to phrases where a verb word with two H's is followed by a noun which has a H that is subject to Neut. Examples appear in (55).

- (55) a-na-ézek-a ny-úmba 'he is thatching the house'  
 (cf. ku-ézek-á, ny-umba)
- a-ná-vwar-a chí-támbi 'he is wearing a piece of cloth'  
 (cf. ku-vwar-á, chí-támbi)
- a-na-Báh-á chí-tanda 'he is getting a bed'  
 (cf. ku-Bah-a is a verb which has an underlying H subject to neutralization, chí-tanda)
- a-na-áfún-á chí-yogwe 'he is chewing a sweet potato'  
 (cf. ku-áfún-á, chí-yogwe)

- a-na-Bírík-á sálamu 'he is sending greetings'  
(cf. ku-Birik-a, salamu)
- a-na-éz-á gwanda 'he is washing a shirt'  
(cf. ku-ez-a is a verb with an underlying H subject to Neut, gwanda)
- ni-ká-vundz-a ru-kúni 'I have broken a piece of firewood'  
(cf. ku-vundz-a, ru-kuni)
- ni-ka-ón-á simba 'I have seen a lion'  
(cf. ku-on-a is a verb with an underlying H subject to neutralization, simba)
- n-á-jit-a ma-rénje 'I cooked pumpkins'  
(cf. ku-jit-a, ma-renje)
- n-á-jit-á dzungu 'I cooked a sp. pumpkin'  
(cf. dzungu)
- n-a-tsóng-á gunguhi 'I carved a bed leg'  
(cf. ku-tsong-a, gunguhi)

Clearly, the second H of the verb word in these phrases attempts to displace to the neutralized vowel in the following noun. The first H of the verb word attempts to displace to the verb stem. The derivation of a-na-ézek-a ny-umba illustrates both of these observations.

(56)	\$	[# <sup>H</sup> a-na-ézek-a#][#ny- <sup>H</sup> umba#]]\$		<u>first cycle</u>
		inapplicable	inapplicable	HE
		<sup>H</sup> a-na-ézek- <sup>H</sup> á	inapplicable	HTD
		inapplicable	inapplicable	Neut, HD, D-NV
		a-na- <sup>H</sup> ézek- <sup>H</sup> á	inapplicable	D-S
		inapplicable	<sup>H</sup> ny-umba	HTS
		inapplicable	inapplicable	FS, Rise-Fall, UFL
	\$	a-na- <sup>H</sup> ézek- <sup>H</sup> á	<sup>H</sup> ny- <sup>H</sup> umba	\$ <u>second cycle</u>
			inapplicable	HE, HTD
		<sup>H</sup> a-na-ézek- <sup>H</sup> á	<sup>L</sup> ny-umba	Neut
			inapplicable	HD
		<sup>H</sup> a-na-ézek-a	<sup>L</sup> ny-umba	D-NV
			inapplicable	D-S, HTS, FS, Rise-Fall, UFL

The derivation of some other items in (55) is quite parallel to the above. For example, a-ná-vwar-a chi-támbi, ni-ká-vundz-a ru-kúni, and n-á-jit-a ma-rénje differ just in that the first H of the verb cannot displace onto the first vowel of the verb stem due to the presence of a voiced obstruent in front of that vowel. n-a-tsóng-á gunguhi differs just in that when the first H of the verb displaces to the verb stem it is able to spread onto the next vowel (whereas in a-na-ézek-a ny-umba the voiced obstruent after the first stem vowel prevents HTS from applying).

Consider next the derivation of an item such as a-na-Bírik-á sálamu.

(57)	\$[ <sup>H</sup> a-na-Bírik-a#][ <sup>H</sup> sálamu#]]\$	<u>first cycle</u>
	inapplicable    inapplicable	HE
	<sup>H</sup> á-na-Bírik-á	HTD
	inapplicable    inapplicable	Neut, HD, D-NV
	<sup>H</sup> <sup>H</sup> a-na-Bírik-á	D-S
	<sup>H</sup> <sup>H</sup> <sup>H</sup> a-na-Bírik-á    sálamu	HTS
	inapplicable    inapplicable	FS, Rise-Fall, UFL
\$	<sup>H</sup> <sup>H</sup> <sup>H</sup> a-na-Bírik-á    sálamu	<u>second cycle</u>
	inapplicable	HE, HTD
	<sup>H</sup> <sup>H</sup> <sup>L</sup> a-na-Bírik-á    sálamu	Neut
	inapplicable	HD
	<sup>H</sup> <sup>HL</sup> a-na-Bírik-á    sálamu	D-NV
	inapplicable	DS
	<sup>H</sup> <sup>HL</sup> a-na-Bírik-á    sálamu	HTS
	<sup>H</sup> <sup>L</sup> a-na-Bírik-á    sálamu	FS
	inapplicable	Rise-Fall, UFL

The crucial fact about this derivation is that HTS spreads the first H of the verb word up to the neutralized vowel, thus setting up the environment for Fall Simplification. This means that the neutralized vowel will be pronounced with a level low tone, the preceding vowel having a level high tone. Similar examples: a-na-Báh-á chí-tanda, a-na-áfún-á chí-yogwe, ni-ka-ón-á simba.

In examples like a-na-éz-á gwanda and n-á-jit-á dzungu, the second H of the verb word cannot displace to the neutralized vowel because it is preceded by a voiced obstruent, thus the H remains on the final vowel of the verb. The first H of the verb displaces to the first stem vowel in the former example but is barred from leaving the prefix in the latter example (due to the voiced obstruent at the beginning of the verb stem). In neither example can the first H in the verb spread since it is followed by a voiced obstruent. Neither can the second H of the verb spread, for the same reason. Since neither of the H's in the verb can associate with the neutralized vowel, that vowel will be pronounced on a low tone.

I will conclude this section by examining phrases where there is a verb word with two H's followed by a noun that has a H that undergoes HTD (and thus is not susceptible to Neut). Examples are given in (58).

- (58) a-na-áník-á má-pémhá 'he is putting maize in the sun to dry'  
 (cf. ku-aník-á, ma-pémhá)
- a-na-tsún-á nǒnzí 'he is skinning a sheep'  
 (cf. ku-tsun-a is a verb with an underlying H subject to neutralization, nǒnzí)
- a-ná-vug-á dǒná 'he is cooking hard maize porridge'  
 (cf. ku-vug-a is a verb with an underlying H subject to neutralization, dǒná)
- n-a-ángámíz-a táná 'I lost the bow'  
 (cf. ku-angamiz-a, táná)
- n-á-vugur-a fúndó 'I untied the knot'  
 (cf. ku-vugur-a, fúndó)
- n-a-tsúkúr-á má-pémhá 'I carried the maize'  
 (cf. ku-tsukur-a, ma-pémhá)

The derivation of a-na-áník-á má-pémhá is illustrated in (59).

(59)	\$[ <sup>H</sup> a-na- <sup>H</sup> áník-a#][ <sup>H</sup> ma-pémhá#]]\$	<u>first cycle</u>
	inapplicable inapplicable	HE
	<sup>H</sup> a-na- <sup>H</sup> áník-á ma-pémhá	HTD
	inapplicable inapplicable	Neut, HD, D-NV
	<sup>H</sup> a-na- <sup>H</sup> áník-á inapplicable	D-S
	<sup>H</sup> a-na- <sup>H</sup> áník-á inapplicable	HTS
	inapplicable inapplicable	FS, Rise-Fall, UFL
\$	<sup>H</sup> a-na- <sup>H</sup> áník-á ma-pémhá \$	<u>second cycle</u>
	inapplicable	HE, HTD, Neut, HD, D-NV
	<sup>H</sup> a-na- <sup>H</sup> áník-á ma-pémhá	D-S
	<sup>H</sup> a-na- <sup>H</sup> áník-á ma-pémhá	HTS
	inapplicable	FS, Rise-Fall
	<sup>H</sup> a-na- <sup>H</sup> áník-á ma-pémhá	UFL

The derivations for a-na-tsún-á nǒnzí and n-a-tsúkúr-á má-pémhá are quite parallel. Consider next the derivation of n-a-ángámíz-a táná.

(60)	\$[ <sup>H</sup> ni- <sup>H</sup> á-angamiz-a#][ <sup>H</sup> tána#]]\$	<u>first cycle</u>
	inapplicable inapplicable	HE
	<sup>H</sup> ní-a-angamiz-á táná	HTD
	inapplicable inapplicable	Neut

ni-a-angamiz-a	inapplicable	HD
ni-a-angamiz-a	inapplicable	D-NV
ni-a-angamiz-a	inapplicable	D-S
ni-a-angamiz-a	inapplicable	HTS
ni-a-angamiz-a	inapplicable	FS, Rise-Fall, UFL
§ ni-a-angamiz-a	tana §	<u>second cycle</u>
ni-a-angamiz-a	inapplicable	HE, HTD, Neut, HD, D-NV
ni-a-angamiz-a	tana	D-S
ni-a-angamiz-a	tana	HTS
ni-a-angamiz-a	inapplicable	FS, Rise -Fall
ni-a-angamiz-a	tana	UFL

The differences between the derivation in (60) and that in (59) can be attributed to the presence in the former case of a voiced obstruent before the ultimate vowel of the verb. This voiced obstruent induces the application of HD on the first cycle and also constitutes a barrier to the spreading of high tones.

Next consider the case of a-nā-vug-a donā.

(61)	§[[#a-na-vug-a#][#dona#]]§	<u>first cycle</u>
	inapplicable inapplicable	HE
	inapplicable donā	HTD
	inapplicable inapplicable	Neut, HD, D-NV
	a-nā-vug-a inapplicable	D-S
	inapplicable inapplicable	HTS, FS, Rise-Fall, UFL
§	a-nā-vug-a donā §	<u>second cycle</u>
	inapplicable	HE, HTD, Neut, HD, D-NV
	a-nā-vug-a donā	D-S
	inapplicable	HTS, FS
	a-nā-vug-a donā	Rise-Fall
	inapplicable	UFL

In this derivation, on the first cycle D-S can displace the first H of the verb only as far as the vowel before the stem, since the stem begins with a voiced obstruent. This voiced obstruent also prevents the spreading of the high tone. The verb -vug- is one that is exempt from HTD, thus that rule fails to apply to the verb word on the first cycle. There is an important point to note about this derivation. The H on the vowel of -vug- is able, on the second cycle, to undergo D-S and land on the vowel that precedes the noun stem (it cannot land on the first vowel of the noun stem since the initial consonant of the stem is a voiced obstruent). But in undergoing this displacement to the final vowel of the verb, a voiced obstruent is crossed. This application of D-S across a voiced obstruent is

otherwise unattested. Somehow, the fact that the H of -vug- crosses the g of the verb, but not the d on the noun, must have to do with the fact that this H is one that is exempt from HTD and subject to Neut. But how these facts are connected is not clear. I suspect that an understanding of this sort of case will have ramifications for the over-all analysis of Digo, but it must at the present time remain a mystery.

The only example in (58) that I haven't yet discussed is n-á-vugur-a fúndo. This item represents another case where the first H of the verb word is unable to reach the first stem vowel due to the presence of a voiced obstruent at the beginning of the stem. The second H of the verb is, however, able to displace to the following noun stem.

The present section represents just the beginning of an analysis of the phrasal tonology of Digo. There are doubtless many complexities yet to be encountered. But the data analyzed here have been quite complex in themselves; however, I believe that the analysis of Digo tonology that I have presented here makes sense out of these very complicated facts and represents a real insight into the structure of Digo tone.

##### 5. Conclusion.

The Digo data analyzed in this paper provide, I believe, interesting confirmation for the view of phonology that is generally referred to as "generative phonology". According to this view, surface phonetic shapes are sometimes the consequence of the application of a set of phonological rules applying (in an ordered fashion) to representations which may differ in significant respects from the phonetic shapes. Notice that the rules and representations which I have postulated in this paper are entirely in accordance with this view. For example, I have argued that there are many items which have a high associated with their penult vowel underlyingly--e.g. ku-som-a 'to read' (cf. ku-somer-á 'to read to') and ny-umba 'house' (cf. nyumba-ní 'in the house')--where this H is never associated with the vowel in question at the phonetic level. Indeed, I have shown that where a H appears on the phonetic surface has little direct connection with where this H originates in underlying structure--e.g. a H that appears phonetically on a noun may originate in the preceding verb. I have also argued that a fairly complex set of rules (operating not just on words, but on phrases as well) mediates between the underlying forms and the surface structure. There can be no question about whether these rules (in some form) are "real", for since they operate on phrases consisting of any verb followed by any noun, they can readily be shown to be fully productive and necessarily a part of the native speaker's knowledge of Digo.

In addition to supporting the viewpoint of generative phonology, the Digo data also provides significant evidence in favor of one particular approach to generative phonology--namely, the autosegmental approach. There can be no question but that tones in Digo are quite separate from the segments that bear them. Tones move from one word to another--quite unlike the segments that manifest the tones.

Finally, Digo provides significant evidence in favor of the cyclic application of phonological rules. The question of cyclicity has been discussed for many years in generative phonology, but most of the crucial evidence for the cyclic application of phonological rules has come from stress phenomena. Digo tone provides a significant new area of evidence in favor of cyclic application of rules. I do not believe, however, that the cyclic nature of the rules in Digo can properly be understood until much more analysis has been done on the interaction of tone and syntax in Digo.

## NOTES

\*I would like to express my gratitude to the University of Illinois Research Board and to the African Studies Program of the University of Illinois for providing funds that helped make possible the research on Digo tonology. I would also like to thank the National Science Foundation, whose Grant No. BNS-7924523 made the writing of this paper possible. Professor Chin-Chuan Cheng has assisted me at every stage of my work on Digo and my debt to him cannot easily be repaid. I have discussed Digo tonology with many people over the past couple years and would like to thank them all for the stimulation that they have given me; I would particularly like to thank Nick Clements, John Goldsmith, and Larry Hyman for the considerable encouragement and discussion that they have provided in the past few months. My greatest debt, of course, is to my consultant, Mr. Mfundo Jumaa Mfundo. I can only hope that I shall have the opportunity to work with him again on this most fascinating language.

<sup>1</sup>It should be noted that mb, nd, and ng (= [ŋg]) are treated in Digo like pre-nasalized stops and they do not behave as though they contain a voiced obstruent.

<sup>2</sup>It is not clear that in the statement of D-S there is any need to refer to a H that is followed by another H (even though in all cases where this rule actually applies, such a following H exists), since--after HTD displaces the rightmost H in the word to the ultimate vowel--the only H's that could move further to the right are ones that do (or that are blocked from doing so by a voiced obstruent).

<sup>3</sup>There are some apparent counterexamples to this claim. There are a few verbs of the shape -C<sub>1</sub>-a; e.g. ku-ty-a 'to obey'. The 3 sg. present tense form of this verb is a-na<sup>h</sup>-ty-a, which suggests that this stem has a H associated with it, even though the root -ty- has no underlying vowel (at least, I have found no evidence for such a vowel). Somehow, this H must be assigned to the penult vowel of the word at some point in the derivation before Neut applies. The penult vowel in this case is the tense/aspect prefix -na-. Thus on the surface we have a prefix vowel apparently undergoing Neut, but the H actually originates in the stem.

<sup>4</sup>See footnote 3 for some discussion of the exceptional cases where the stem does not have a vowel.



<sup>5</sup>I will show later in the paper that in some cases displacement to the neutralized vowel is halted by a voiced obstruent anywhere between the H being displaced and the neutralized vowel, whereas in other cases it is only a voiced obstruent immediately before the neutralized vowel that halts the shift of the H toward the neutralized vowel.

<sup>6</sup>It seems to be a very general fact about Bantu grammatical structure that object prefixes are closely bound to the verb stem. For example, in certain tenses in Makua (a Bantu language of Tanzania and Mozambique), a high tone is assigned to a particular vowel in the verb stem--and an object prefix "counts" as part of the stem for the purpose of this tone assignment process.

<sup>7</sup>The phenomenon of a high tone being lowered after a high tone is quite pervasive in Bantu tonology, but I have found no evidence in Digo that the rule has any wider scope of application than the context defined in the text.

<sup>8</sup>K&W note that in utterance-final position, all-low words are characterized by a mid-falling pitch on their penult vowel. The situation is actually somewhat more complicated. When our consultant pronounces words of this sort in isolation (under elicitation conditions), the nature of the fall on the penult vowel varies considerably. In particular, in short words (where the penult vowel is the first or second vowel of the word), the fall may be quite high. In longer words, the fall is not nearly so high. Consequently, the investigator might, upon first hearing all-low words, confuse some of them with words that have a high-fall on their penult vowel (due to the application of Neutralization and Displacement-to-Neutralized Vowel). However, the difference between these two types of words is clear when they are juxtaposed with one another.

<sup>9</sup>It seems likely that kundé-ní is a reflection of the structure:

$$\begin{array}{c} \text{H} \\ \text{L} \\ \text{kundé-ní} \end{array}$$

where the L on the ultimate vowel derives from a H via Utterance-Final Lowering. Similarly, it is quite likely that zódó-ní derives from the structure

$$\begin{array}{c} \text{H} \quad \text{L} \quad \text{H} \quad \text{L} \\ \text{zódó-ní} \end{array}$$

where the rising-falling sequence on the last two vowels is the result of the application of Rise-Fall to an ultimate H. The problem is: given that the noun has a H associated with it, but the -ní does not (apparently), where does the second H come from? In section 3 some apparently related data are cited.

<sup>10</sup>The examples in (11) suggest strongly that the rules of Rise-Fall and Utterance-Final Lowering are not actually triggered just at the end of an utterance, but also in certain other configurations (since the data in (11) clearly reflect the application of Rise-Fall and UFL to the noun, which is obviously not at the end of an utterance). The question of the precise range of contexts in which these two rules apply cannot be answered without a detailed study of Digo sentence structure.

<sup>11</sup>Incorporating this constraint into D-S would require that Neut be applied before D-S, since Neut is the rule that derives the L on the penult vowel.

<sup>12</sup>The alternative to allowing both H's to associate with the first stem vowel via D-S would be to postulate a rule that would have the effect of deleting one of the H's. Recall, however, that in the case of high-toned verb stems that are subject to Neutralization, no deletion of a H occurs in the past tense. Consequently, I have opted for the analysis presented in the text, which simply allows both H's to associate with the stem via D-S.

<sup>13</sup>The following example illustrates that the bilabial continuant sound that I have symbolized with the letter B does not function as a voiced obstruent in Digo, but rather as a sonorant.

<sup>14</sup>This is not precisely true, from a phonetic point of view. Recall from footnote 8 that all-low words have a falling pitch on their penult vowel; this fall may be fairly high when the penult vowel is the first vowel of the word, but noticeably less high when several syllables precede the penult. Thus the isolation form of the nouns in (41) and (42) may be pronounced with a considerably higher fall than would be present in cases where the noun is pronounced as part of a phrase.

<sup>15</sup>This derivation illustrates why I have formulated HD so that it results in two H's in the tonal tier. Suppose that instead I had formulated the rule so that it added an association line between a H and the penult vowel provided the H is associated with an ultimate vowel that is preceded by a voiced obstruent. Given such a formulation of HD, on the second cycle HTD would apply to that H and associate it with the ultimate vowel of the phrase (disassociating it from the vowels that it had previously been associated with). The result would be the loss of the required high tone on the penult vowel of the verb.

<sup>16</sup>I should note here that in the account I have given of the interrelationship between HTD and Neut, I have relied heavily on HTD being formulated so as to move a H to the ultimate vowel. H's located on the ultimate vowel will escape Neut, which affects only H's associated with the penult. Thus if this account is correct, we have a strong motivation for assuming that HTD reassociates a H with the ultimate vowel rather than the penult vowel (as assumed in K&W).

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A STUDY ON CODE-SWITCHING IN TAIWAN \*

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This study focuses on the investigation of situational selection of codes (Mandarin versus Southern Min) in Taiwan using the theoretical construct of 'domain' proposed by Fishman. Eight domains are adopted in this study: family, friendship, neighborhood, internal, employment, religion, education, and administration. A carefully constructed survey, comprised of questions on the choice of language variety in different domains, was distributed to a randomly selected sample of the Mandarin-Southern Min students from Taiwan at the University of Illinois. The results show:

- 1) Language choice of Mandarin versus Southern Min is by no means random. A general pattern can be captured through domain analysis. The use of Mandarin is predominant in the friendship, internal, employment, religion, education, and administration domains; it also has restricted use in the family and neighborhood domains. The use of Southern Min is correspondingly predominant in the family and neighborhood domains; it has restricted use in the friendship and religion domains.
- 2) Within each domain, factors which influence language choice can be isolated such as age of participant, seriousness of topic, urban versus rural setting, and nature of discourse (degree of authority and distance).
- 3) The bilingual situation in Taiwan is an unstable one. There is a shift toward the predominance of Mandarin as evidenced by its growing use in the intimate domain.

0. Introduction

In a speech community having a verbal repertoire of more than one language variety, the choice of one language variety in a given situation versus the choice of another is far from random. From a communicative standpoint, each language is sufficient on its own; therefore, the very co-existence of more than one language in a society over a period of time implies that each serves a specific function to a certain extent. The motivation for such functional allocation may be to maintain culture identity or to convey certain social values as in the case of Norwegian dialects Ranamal and Bokmal described by Gumperz and Blom (1972). In the past several decades, linguists have been increasingly interested in the functional aspects of linguistic codes and the patterning of usage in multilingual societies (See e.g. Gumperz and Hymes 1972, Hymes 1964, Ferguson 1964, Kachru 1978 a, b). And such studies are essential toward the understanding of the use of language in a larger societal context. My interest in this paper is to investigate the sociolinguistic pattern in a bilingual society - Taiwan. The phenomenon I am particularly interested in is that of switching: the alternate use of language on the basis of

situation and participants (Gumperz and Blom 1972:415).<sup>1</sup> Some of the questions I try to answer are: Is there a pattern governing language choice? If so, what are the spheres of activities that dictate the use of one versus the use of another? To what extent does each language variety serve a different function? How does the language planning effort of the government affect the language choice? Is there a stable bilingualism in Taiwan, a diglossia in the Ferguson sense (1964:430), or is it a situation of unstable bilingualism? If it is in the process shifting, to what extent and in what direction?

Firstly, I will describe the relevant historical and sociolinguistic background of Taiwan which led to the present state of bilingualism. Secondly, I will present my study, which takes the form of a survey, on code-switching in Taiwan. Finally, I will try to analyze the results and form generalizations on the pattern and nature of Taiwan bilingualism.

## 1. Historical and Sociolinguistic Background

### 1.1 Ethnic and linguistic groups in Taiwan

Taiwan is an island off the coast of the southeastern part of mainland China. The communication between mainland China and Taiwan can be dated back to the 7th century. However, the first large influx of mainlanders to Taiwan occurred in the 14th century. The majority were Southern Min speakers and the rest were Hakka speakers.<sup>2</sup> In 1685, during the Qing Dynasty, Taiwan became a province of China. In the following 200 years, mainlanders, mostly Southern Min speakers, continued to settle in Taiwan. In 1895, Taiwan was ceded to Japan. The Japanese occupation lasted for 50 years until the end of the Second World War at which time Taiwan was returned to China. In 1949, at the end of the Chinese civil war, the Nationalist government moved to Taiwan. Along with it came approximately one million mainlanders comprised of soldiers, government employees, teachers, merchants and intellectuals. Today, in addition to the 234 thousand aboriginal Malayo-Polynesian speakers, the population in Taiwan (17 million) consists of 36.4% old settlers, those whose ancestors settled before the 20th century, and 13.6% newcomers, those who came around 1949 (Xue 1977:338).

The linguistic situation of Taiwan is a complex one. In addition to Mandarin, the Standard Language, there are various dialects: Southern Min, Hakka, as well as other Central and Northern dialects. All of these are distinct entities originated from one language but evolved into mutually unintelligible dialects. The majority of the population (old settlers) speaks the Southern Min dialect. The minority (new settlers) speaks Hakka, Yue, Northern Min, Wu, Gan and Northern dialects. The interest of this paper is focused on the interplay between the Southern Min dialect and Mandarin.

### 1.2 Language planning in Taiwan

The Nationalist government started a language standardization campaign on the mainland in the 1920's. It promoted Mandarin, a Northern dialect, as the Standard Language. This decision was based on the facts that Northern dialect was considered the dominant language spoken by 70% of the

Han Chinese (Yuan 1960:22), that Peking had historically been the political center of China and that a large wealth of colloquial Chinese novels were written in Peking speech.

In 1944, the Ministry of Education formulated 5 guidelines for the promotion of the Standard Language (Fang 1965:130):

- 1) Implementing the standardization of pronunciation of Mandarin
- 2) Promoting Mandarin as the National Language and basis for wider communication, both nationally and internationally
- 3) Promoting the National Phonetic Symbols as supplement to the Chinese characters to eliminate illiteracy
- 4) Promoting the National Phonetic Symbols for the communication between Han Chinese and the minority ethnic groups
- 5) Improving the Mandarin teaching methods in schools

When the Nationalist government moved to Taiwan, the promotion of the Standard became one of the urgent tasks. Since the general population had been educated in Japanese, another essential guideline was included: to recover the status of the Southern Min dialect in order to bridge the way to the full use of Mandarin (Fang 1965:130).

The campaign on the promotion of Mandarin in Taiwan has been vigorous. The medium of instruction is Mandarin. The mass communication media, radio and T.V., include some Southern Min dialect programs but the prime-time programs are mostly in the Standard Language. Although the folk arts such as local operas and songs are kept in the dialect form and are still popular, the entertainments in Mandarin enjoy even more widespread success.

### 1.3 Language attitudes

To understand the pattern in language use, the psychological factors cannot be ignored. The individual attitudes toward the language may need a detailed, controlled study. However, the sentiments on a larger scale can be abstracted from trends in the past. There are two forces relevant to the discussion of Taiwan bilingualism: nationalism and regionalism. Depending on which force is predominant, the resulting choice of language can be different.

Language loyalty is defined by Weinreich as an emotional involvement with a particular language when one feels that language is threatened and needs to be defended (Weinreich 1953:99). Fishman (1966:452) also made the parallel observation that language loyalty is primarily a defensive mechanism in reaction to the presence of linguistic competitions. The conscious efforts of different ethnic groups to maintain their cultural and linguistic identity begin only after facing the danger of displacement as in the case of different American immigrant groups. Weinreich also correctly observed that "a group's language loyalty and nationalistic aspirations do not necessarily have parallel goals" (Weinreich 1953:100). In the case of Taiwan, at a time right after the Japanese occupation, it is obvious that language loyalty and national aspirations had congruent goals. The success of the language standardization measures has to be attributed to the fact that the population at large was feverently anti-Japanese, and was eager to identify with the National language. The people in Taiwan were more receptive to the teaching and the use of the Standard Language.

Now, however, more than 30 years after the launching of language standardization in Taiwan, one observes a rise of regionalism. There has been an increase in the number of the Southern Min dialect programs on T. V. and there have been quite a few writers incorporating dialect features in their work. I view this again as a manifestation of language loyalty. This time, it is directed toward the dialect since many feel that its existence is threatened by the vigorous promotion of the Standard Language (Wu 1972:393). A recent trend of decrease of percentage of Hindi speakers in certain Indian regions also exemplifies this universal phenomenon of regionalism versus nationalism (See e.g. Y. Kachru and Bhatia 1979).

Given the interplay of these two forces, nationalism on the one hand and regionalism on the other, I have also observed an ambivalent attitude among the Southern Min speakers. Many express the view that a standard language is essential for national unity but the dialect cannot and should not be eradicated. While the importance of Mandarin in wider communication is recognized, many nonetheless express pride in the use of the dialect because it is rich in archaisms. All in all, the Standard Language seems to occupy the primary position.

## 2. Study on Code-switching

Having seen the historical and social factors which help to explain the present state of bilingualism in Taiwan, I will now go into the investigation of locating social variables which are determinants in the patterning of individual usage. If such variables can be abstracted, one can determine not only the general pattern of usage, i.e. who speaks what to whom and to what end (Fishman 1972), but also the nature of Taiwan bilingualism, i.e. whether it is stable or not.

### 2.1 Theoretical framework

In the past, linguists have isolated many dimensions to characterize the alternate use of language varieties. The important consideration here is to form an analysis that not only captures the social level of regularity but also takes into account the individual fluctuations in speech (Fishman 1972:247). Gilman and Brown (1960) use two dimensions to describe the use of personal pronouns 'tu' and 'vous' in several European languages. They formulate in terms of sociopsychological relationship between the speakers: 'power' and 'solidarity'. Similarly, Rubin (1963:109) in her study on bilingualism in Paraguay isolates a hierarchy of sociopsychological factors in determining the appropriate language usage between Spanish and Guarani. The factors ordered according to importance are: 1) location, 2) formality of interaction, 3) degree of intimacy of interaction, and 4) degree of seriousness of discourse. There are also additional factors: school pressure and estimate of the linguistic proficiency of the addressee. Hymes (1964) and Ervin-Tripp (1964) also use the participant, ecological surroundings, and topic as situational constraints in bilingual communication.

Along the same line as the linguists above, Fishman (1964, 1971, 1972) formulated the concept of 'domain' to describe the larger and more abstract societal-institutional context of bilingual interactions. It is an abstract construct derived from the three components: 1) locale of the

interaction, 2) role relationship of the speakers, and 3) topic of the discourse. The purpose of this theoretical construct is to relate the specific language choice to specific spheres of activity which are determined by the sociocultural dynamics of the community (Fishman 1972:441).

Since domain is a sociolinguist's summarization of the relevant societal-institutional contexts of a given community, the domains of one community may differ from those of another community in number as well as kind. Schmidt-Rohr (Fishman 1972:441) came up with 9 domains: 1) family, 2) playground and street, 3) school, 4) church, 5) literature, 6) press, 7) military, 8) courts, 9) government administration and Greenfield (1972:23) in his study on Puerto Rico bilingualism isolated 5 domains: 1) family, 2) friendship, 3) religion, 4) education, 5) employment. The domains are related to the tripod components role, locale, topic in that each domain is a composite of the three. For example, the family domain includes parent-child relationship (domain appropriate person), talk about family matters (domain appropriate topic) at home (domain appropriate locale).

Even though the set of domains may vary from community to community, it should not only capture the relevant relationship between language choice and institutional contexts, but also reveal the pattern of bilingualism.

Fishman (1968) postulated that typically, in a diglossic community, the L variety (local, dialectal) is associated with family and friendship domains whereas the H variety (superimposed, standard) is associated mainly with the education, occupation and religion domains. In the case of stable bilingualism, there is a clear division of labor in choice of language for different domains whereas in the case of unstable bilingualism, the alternate use of the two languages can occur even in a more intimate and stable domain such as that of family and friendship. Thus the domain model is a useful one both to describe bilingual usage and to characterize the direction of shift.

## 2.2 Survey

### 2.2.1 Format

Having the domain analysis in mind, I tailored my study on Taiwan code-switching to follow the same framework. My goal is firstly to determine generally what dialect is spoken in what domain and secondly to determine whether the bilingualism is a stable one using the domain analysis.

The study takes the form of a self-report survey including questions, in multiple choice format, on a range of domains. Since domain is constructed around the cultural, societal values of the community derived from active participant observation and on a large part based on the investigator's intuition, I generalize 8 domains which I feel are relevant for the Taiwan bilingual society: 1) family, 2) friendship, 3) education, 4) neighborhood, 5) employment, 6) administration, 7) religion, 8) internal speech. Within each domain, I list several typical role relationships (e.g. in the family domain: parent-child), locales including public as

well as private (e.g. on the bus, at home, etc.) and ranges of topics (e.g. politics, academics, etc.). An example of the questions asked is as follows:

What language do you use when speaking to your parents at home?

- 1) All Southern Min dialect
- 2) Mostly Southern Min dialect
- 3) Both
- 4) Mostly Mandarin
- 5) All Mandarin

The list in the questionnaire is by no means exhaustive. But such an exhaustive list covering all social interactions is very difficult to compile. To remedy the possibility of overlooking information, I also include questions and spaces for the subject to supply situations to supplement the ones I have already given.

The questionnaires also include demographic background questions: age, sex, educational background, place of birth, etc. This information is relevant because very possibly the individual use of language can be correlate with his personal background.

A question on language proficiency is also included. Although the level of language proficiency for both languages does affect the choice of which language to use, this is not the main concern of this paper. The major point is to determine the appropriate social context for the choice of one dialect versus another. Thus the relative proficiency in the language only serves as a checkpoint so that a person's avoidance in using a dialect due to a lack of proficiency in that dialect should not be mistaken as related to a social variable. For the same reason, I also ask the subjects to make the assumption that all addressees (other than family members) know both varieties equally well. So again the level of language proficiency of the addressee does not come into play as determinant of dialect choice in a given context.

A total of 40 questionnaires were sent out to a randomly selected sample of Taiwan students. 21 were returned, 13 of which were from male respondents and 8 from female respondents. Because all subjects belong to Taiwan regional club here on the University of Illinois campus, they are of Southern Min parentage and are bilinguals of varying degrees. They are all graduate students here, and thus similar in level of education. All of them had done their undergraduate work in Taiwan.

A final word can be said about the format of this survey. The main drawback of using surveys of this nature in linguistic study is that many bilinguals may not consciously know what variety he uses in a given situation. His linguistic attitudes may affect his report on his own language usage. Also the data collected in this manner may reflect his projection or recollection of a given situation which may differ from a spontaneous social context. For these reasons, it should be followed up with studies using other methodologies. These drawbacks notwithstanding, this study provides some promising generalizations.

### 2.2.2 Results

(See Table 1)

### 2.2.3 Discussion of the results



A. In the family domain (Questions 1-7), the Southern Min dialect is the predominant language. However there are some exceptions: to the spouse (Question 5) and to the children (Question 7). In the case of the spouse, there is a slight majority favoring the use of Mandarin. And to the children, the majority indicate the use of both. The age factor seems to play a role here. The younger the addressee, the more that person is identified with the modern trend, which is manifested as speaking to him in Mandarin. This seems to be reconfirmed by the answer to Question 9 where the majority indicate usage of Mandarin in talking to a younger neighbor. The effect of wider Mandarin education however may also be a factor here.

B. In the neighborhood domain (Question 9-15), the Southern Min dialect is used most frequently. However, one can make finer distinctions in that there is a significant decline from the number of people who would speak Southern Min dialect to the market salesman, to those who would speak Mandarin to the department store clerk (See Table 2). One may suspect that the position of locale in the urban-rural spectrum contributes to the choice of language. Markets and groceries are usually located a few blocks away from the house, thus the language of the neighborhood, Southern Min dialect, is used predominantly. However when one moves farther away from the home and closer to the urban center where department stores and taxi drivers are found, the language of preference shifts considerably in the direction of the Standard.

C. In the education domain (Question 16-18) where the language standardization effort was found to be the most rigorous, it is not surprising to see that the language used most is Mandarin. In particular, when the addressee is the teacher (Question 17), the language used is overwhelmingly Mandarin, regardless of the locale of interaction. In the case where the addressee is a schoolmate, the language use fluctuates, with notably more use of dialect when the locale is the home (Question 16b).

D. In the employment domain (Questions 19-21), the majority of people indicate Mandarin as the language most often used. It is interesting to note that at work and outside of work, the use of Mandarin in speaking to the superior (Question 19) and to the subordinate (Question 21) is slightly more than that to coworkers (Question 20). This may be evidence indicating that Mandarin is used to signal authority and distance. However, in the sphere of employment, the boss-friendship boundary is not clear-cut. This may explain the even split of usage between the two varieties when one speaks to the boss outside of work (Question 19b).

E. The hypothesis that Mandarin is used to signal authority and distance is further supported in the administration domain (Questions 22, 24, 25 and 26) and in the case where the addressee is a stranger (Question 23). In all these cases Mandarin is predominantly used.

F. In the friendship domain (Question 8, 27 and 28), with the exception of gossiping (Question 27e) and conversation at a regional club (Question 28), Mandarin is the favorite language of interaction. In both cases, the use of Southern Min dialect may be to indicate an 'in-group' feeling. Answers to Question 3 indicate that although one uses Mandarin throughout the dating process, there is an increase of use of Southern Min dialect as the couple become closer.<sup>3</sup> This is congruent to the observation

above that Mandarin is used to signal authority and distance. Symmetrically, the Southern Min dialect is used to signal intimacy. Answers to Questions 27a-g indicate that the seriousness of the topic is directly correlated to the frequency of Mandarin usage. The topics high on the seriousness scale such as national affairs, academics and work all induce high usage of Mandarin. For the topics which are less serious such as joking and anecdotes of what happened at home, there is a fairly even split of usage slightly favoring Mandarin.

G. In the religion domain (Questions 29-34), there are two tendencies in language use depending on the religion. In the case of Christianity as signaled by the use of 'church' in the question (Questions 29-31), Mandarin is favored. In the case of local religion, Buddhism, the Southern Min dialect is favored. One explanation for this phenomenon may be that Christianity is associated with urbanization, westernization and modernism and the H variety is usually tied with these values. Furthermore, Buddhism is a local religion deeply rooted for centuries and thus identified with the L variety. It is interesting to note that in the sphere of religion, locale seems to have precedence over role relationship: speaking to a priest, to a friend, or to oneself does not have much effect on the choice of language.

H. The final domain is that of internal speech and emotion (Questions 35-40). With the exception of dreaming (Question 35), all other contexts have Mandarin as the predominant language. The use of Mandarin in counting (Question 36) may be explained by the fact that like all other subjects, it is taught in elementary school in Mandarin and used throughout the mathematics class in higher school levels. In the case of extreme emotion such as sadness, anger and excitement (Questions 37, 39 and 40), contrary to one's expectation that the first language would be used, one finds the predominant use of Mandarin.<sup>4</sup>

#### 2.2.4 Analysis of the results

The choice of language variety in different domains is summarized in Table 3 where the general pattern of usage with reference to the 3 domains is captured.<sup>5</sup>

As indicated earlier, domain analysis can be used as a criterion to determine whether the bilingual society under study is a stable one, and if not, in what direction it is shifting. In a typical diglossic community, the relationship between choice of language and domain is quite clear-cut. H variety is associated with religion, work and education domains whereas L variety is associated with family and friendship domains. However, if one finds the domain distinction vanishing in terms of language choice as indicated by the use of H variety in domains normally associated with L variety, the bilingual community under study then is an unstable one.

After examining the 3 relevant domains in the Taiwan bilingual community, one can make several observations. Firstly, one finds that the predominant use of Southern Min dialect is restricted to the family and neighborhood domains with limited use in the friendship and religion domains. The use of Mandarin is predominant in the friendship, internal, employment, religion, education and administration domains with limited use

in the family and neighborhood domains. It seems there is an encroachment of Mandarin in the family and neighborhood domains (to spouse, children, younger neighbor). Secondly, in addition to this contamination of language use in the intimate domains, there is a shift in the use of language in the internal speech and friendship domains which are normally associated with L variety. This provides further support to the postulation that bilingualism in Taiwan is shifting toward the use of Mandarin. Thirdly, if we contrast the habitual language use of the parents (Questions 11, 13 and 18) to that of this generation (Questions 10, 12 and 17), we find a significantly different pattern in usage. This generation uses Mandarin significantly more (See Table 4). Similarly, if we contrast the choice of language when the addressee's age varies (Questions 4 and 9), again one finds an increased use of Mandarin when the addressee is younger. All these point to the conclusion that Taiwan bilingualism is not in equilibrium as in the case of Paraguay (Rubin 1968) and Canada (Lieberson 1972). It is in a transitional state moving toward monolingualism.

### 3. Conclusions and Future Research

In the study, I have not only presented the historical sociolinguistic factors that led to the present state of bilingualism in Taiwan, but also examined the pattern of code-switching using domain analysis. Within each domain, I have isolated factors which may affect the language choice in Taiwan situation and made tentative generalizations about the possible outcome of this bilingualism. To validate the findings of this study, follow-up studies that include large samples of population with more diverse backgrounds are needed. In that case, a more rigid statistical analysis will be necessary. Also, studies employing different methodologies, such as interviewing or participant observation, may obtain results closer to natural interaction situations.

The code-switching phenomenon in Taiwan is by no means an isolated one. Cross-cultural studies covering formal, functional, and psychological aspects of code-switching have been fruitful (See e.g. Paradis 1978, Williamson and Van Eerde 1980) and the present study provides further evidence, as well as a detailed account of the language dependency on social contexts in Taiwan.

As indicated in this study, the functional allocation of language variety in a multilingual community is by no means random. Moreover, in Taiwan, a bilingual community in the process of shifting, a new norm is manifested in the increased use of the Standard Language in the intimate domains.

Another related and relevant area of study is that of code-mixing, a phenomenon crucial in the study of language change and repertoire change. It would be interesting to see code-mixing analyzed in this framework. Does the phenomenon of code-mixing cut across all domains or is it limited to certain domains? How is it different functionally and formally from the phenomenon of code-switching? If we can identify the locations, the extent, the forms, and the functions of code-switching and code-mixing, then we can undoubtedly contribute to the understanding of the activating force behind language change and language shift. This study provides a starting point from the Taiwan perspective.

## NOTES

\* I would like to thank Professor C. C. Cheng, Professor B. Kachru, and Professor H. Kahane for their helpful comments and guidance in the course of preparing this paper.

<sup>1</sup> Code-switching here is taken in the strict sense: shifting between languages or language varieties which are not mixed. Various issues concerning the distinction of code-switching and code-mixing are not taken up here. For details, see Kachru (1978 a, b), Warie(1978), Wentz(1977).

<sup>2</sup> The dialect groups in China are: (The percentage is based on Yuan 1960. However, the population is inferred based on the present Han population of 900 million. A more up-to-date census is not available.)

Han people	900 million	
Northern dialect	630 million	70 %
Wu	76 million	8.4%
Xiang	45 million	5 %
Gan	22 million	2.4%
Hakka	36 million	4 %
Yue	45 million	5 %
Min		
South Min	27 million	3 %
North Min	11 million	1.2%

<sup>3</sup> A similar finding was reported in Paraguay by Rubin (1968:106).

<sup>4</sup> In her study on bilingual attitudes among Canadian academics, Rabel-Heymann (1978) found all languages are used for dreaming and an even split of languages used for insult.

<sup>5</sup> Code-switching in domain analysis is by no means a homogeneous division. One can not say in an absolute sense that language A is spoken in domain X, but only that language A is spoken predominantly in domain X. By doing so, one does not exclude the possibility that there is code-mixing going on.

Table 1 - Results of the Study

Context	All or Mostly S. Min Dialect	Both	All or Mostly Mandarin	No Response
1. to grandparents	20			1
2. to parents				
a) at home	19	1	1	
b) outside	18	2	1	
3. to sibling				
a) daily	9	6	5	1
b) argue	12	3	5	1
c) joking	11	3	6	1
4. to relatives				
a) elder	19	1		1
b) same	14	5	1	1
c) younger	12	5	3	1
5. to spouse	7	2	8	4
6. to parents-in-law	10	1	5	5
7. to son/daughter	4	8	6	3
8. to boy/girl friend				
a) initially	3	5	12	1
b) intimate	6	2	12	1
9. to neighbors				
a) elder	14	3	4	
b) same	11	5	5	
c) younger	8	3	10	
10. to neighborhood grocery owner	18	2	1	
11. parents to the same owner	20		1	
12. to market salesman	17	2	2	
13. parents to the same salesman	20	1		
14. to department store salesman	12	2	7	
15. to taxi driver	10	7	4	
16. to schoolmates				
a) in school	1	5	14	
b) at home	4	5	11	1
c) fieldtrip	2	4	14	1
d) on bus	2	3	16	
e) on phone	2	6	13	
f) lecture	2	3	15	1
g) concert	2	4	14	1
17. to teacher				
a) at school		1	19	1
b) at home	1	2	17	1
c) on street	1	1	19	
d) on picnic	2	1	17	
e) snack stand outside school	2	2	16	

Context	All or Mostly S. Min Dialect	Both	All or Mostly Mandarin	No Response
18. parents to teacher				
a) at school	7	4	10	
b) at home	8	5	8	
19. to boss				
a) in office	6	5	10	
b) outside	8	5	8	
c) on phone	7	3	11	
20. to coworkers				
a) at work	6	6	9	
b) outside	6	7	8	
21. to subordinate				
a) at work	3	6	11	1
b) outside	3	7	10	
22. to police	3	2	16	
23. to people just met	1	6	14	
24. to city government employee	3	6	12	
25. to doctor	6	7	8	
26. to hospital employee	5	7	9	
27. to friends about				
a) national affairs	2	6	13	
b) academics	1	2	18	
c) work	2	3	15	
d) anecdote about home	7	6	8	
e) gossip	8	6	7	
f) at wedding banquet	7	7	7	
g) joking	5	7	9	
28. at a Taiwan regional club	11	5	5	
29. to priest at church	5	2	13	1
30. to friend at church	5	5	10	1
31. praying at church	6	4	9	2
32. to friend at temple	16	3	2	
33. praying at temple	15	2	4	
34. in local religious festival	16	1	3	1
35. in dream	6	8	5	2
36. counting	1	4	15	1
37. cursing	3	2	15	1
38. mumbling to self	2	5	13	1
39. in excitement	2	4	14	1
40. sad	3	4	13	1

Table 1B - Questions on General Impressions

Questions	Often	Sometimes	Never	No Response
41. occasions when only S. Min can express things well	6	13		2
42. occasions when only Mandarin can express things well	10	8	1	2
43. which language do you feel closest to	S. Min	Both	Mandarin	No Response
	10	8	1	2

Table 2 - Contrasting the Urban-ness of Locale

Context	All or Mostly S. Min	Both	All or Mostly Mandarin
10. to neighborhood grocery owner	18	2	1
12. to market salesman	17	2	2
14. to department store salesman	12	2	7
15. to taxi driver	10	7	4

Table 3 - Summary of Language Usage with Regard to Domain

Informal Domains ("X" indicates predominant usage)

Majority Dialect	Family	Friendship	Neighborhood	Internal
S. Min	X	gossip	X	
Mandarin	spouse	X	younger	X
Both	children			

Formal Domains ("X" indicates predominant usage)

Majority Dialect	Employment	Religion	Education	Administration
S. Min		X (temple)		
Mandarin	X	X (church)	X	X
Both	outside to boss			

Table 4 - Contrasting Habitual Language Use between Older and Younger

Generations

Context	All or Mostly S. Min Dialect	Both	All or Mostly Mandarin	No Response
4. to relatives				
a) elder	19	1		1
b) same	14	5	1	1
c) younger	12	5	3	1
9. to neighbors				
a) elder	14	3	4	
b) same	11	5	5	
c) younger	8	3	10	
10. to neighborhood grocery owner	18	2	1	
11. parents to the same owner	20		1	
12. to market salesman	17	2	2	
13. parents to the same salesman	20	1		
17. to teacher				
a) at school		1	19	1
b) at home	1	2	17	1
c) on street	1	1	19	
d) on picnic	2	1	17	
e) snack stand outside school	2	2	16	
18. parents to teacher				
a) at school	7	4	10	
b) at home	8	5	8	



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SOME OBSERVATIONS ON DISCOURSE AND SENTENCE GRAMMAR

Jerry L. Morgan

This paper examines two lines of criticism of sentence grammar, drawn from the literature of discourse studies. It distinguishes two related positions: that sentence grammar is incorrect, and that it should be abandoned in favor of a theory of discourse that reformulates or entirely subsumes sentence grammar. Some arguments for the first position are discussed and shown to be unconvincing. The final section is a speculative discussion of the second position.

1. Introduction

During this time of remarkable growth in the study of discourse, an important question has been posed for the generative grammarian and the discourse theorist alike: what is the relation between, on the one hand, the mental systems that underlie human ability to understand and produce connected discourse, and on the other hand, theories of grammar of Chomskyan coloration that take just sentences as their domain; what I shall call "sentence grammar."

There are a number of positions one might take on the relation between discourse competence and sentence grammar, either on a prioristic or empirical grounds. A couple of these positions are potentially threatening to theories of sentence grammar, and I would like to examine some arguments that might be advanced for them, to see whether the arguments are persuasive as criticisms of sentence grammar.

The literature of discourse studies by linguists, from at least van Dijk (1972) to de Beaugrande (1980) and Givon (1980), contains a number of proposals with a common thrust: that close study of problems of discourse analysis and theory shows that sentence grammar is deficient in important respects, hence incorrect; therefore it ought to be abandoned in favor of a general theory of discourse. But in fact such proposals contain two major claims that are logically independent, since one can be true and the other false. The weaker of the two is the claim that certain facts about discourse show that generative sentence grammar cannot be the correct account for sentence syntax and semantics. The second, stronger position, is that the right discourse theory (or complex of theories) will do the work of a generative sentence grammar, making the latter superfluous as a distinguishable component of over-all linguistic ability, thus debunking such important hypotheses as the autonomy of syntax, the independence of sentence grammar, perhaps even the existence of a logically independent "language faculty." These are not trivial issues, as one can see from the large and combative literature in several fields that has grown around Chomsky's work. So it is worthwhile to consider whether the arguments against sentence grammar that are so common in the literature of discourse theory actually are a threat to sentence grammar theory.

In this paper I want to examine both the weak and strong positions, to determine the strength of the arguments for each. I will try to show that arguments for the weak position have no force, since they overlook a central claim of sentence-grammar theory. I will argue that the strong position, though unconvincing in present forms, is more promising, and worth pursuing. I will also discuss what it would take to make the strong position a more persuasive one.

## 2. The weak position

Arguments for the weak position--that is, against sentence grammar--are generally taken as arguments for the complete abandonment of sentence grammar, in favor of some other theory. But it is not always clear what the crucial property of sentence grammar is that the argument is directed against. So it might be useful to point out some central properties of sentence grammar. I believe that the following five properties--that is, claims about the nature of grammar--are characteristic of more-or-less standard versions of generative grammar:

1. The independence of sentence grammar: Linguistic competence contains as a distinguishable component a cognitive system whose domain is the sentence (and, implicitly, smaller expressions that make up sentences). The fact that this system interacts with other cognitive systems in performance is not an argument against the claim that it is an independent system. The boundaries of this system--that is, what properties of sentences fall in its domain--is an open empirical question, not determinable by a priori means.
2. Language-uniqueness: At least some aspects of this cognitive system--or, from the linguist's viewpoint, the conceptual vocabulary for describing it--are unique to language, not found in other cognitive systems.
3. Grammar is formal: Sentence grammar is organized, and, from the linguist's viewpoint, can be described, purely as a matter of form, entirely independent of questions of communication, speaker's intention, and other matters of language use.
4. Structure is Chomskyan: The proper treatment of the notion "sentence structure" is in the terms of the familiar phrase markers in the work of Chomsky and many others before and since; that is, syntactic structure (at a given level) is reducible to relations of dominance, precedence and syntactic category, and other notions defined in these terms.
5. More than one level of structure: An empirically adequate grammar requires that each sentence be assigned at least two levels of structure. The exact number of levels is an open question.

Obviously these give properties do not exhaust the conceptual content of generative grammar; Chomsky's more recent work on "Extended standard theory," to pick a single example, is far richer. And in fact there is

not unanimity on all five properties even within the generative camp. Properties 4 and 5 are presently controversial within generative grammar, under attack by proponents of "arc-pair grammar" (Johnson and Postal 1980) and in recent work on "constituent structure grammar" by Gazdar and his collaborators (Gazdar (to appear)). Abandoning or replacing these properties would indeed constitute an important theoretical shift; but the result would still count, as far as I can see, as a sentence grammar of the sort under attack from discourse theorists. Unless I am mistaken, it is properties 1 through 3 that are relevant to the criticism of generative sentence grammar vis-a-vis discourse grammar.

The question is, then: do the arguments for the weak position succeed as arguments against the first three properties?

There are two lines of argument for the weak position. The first, apparently intended as an argument against the independence of sentence grammar, is that the only "naturally occurring unit" for linguistic analysis is the discourse, not the sentence. This argument is far from convincing. If it is taken as a rather bizarre a priori methodological restriction, then it has no bearing on the question of independence. Even following this restriction, there is no reason to believe that it precludes the possibility of discovering, from close analysis of discourse, motivation for an independent sentence component. Taken more seriously, as leading in some obscure way to an a priori argument against the independence of sentence grammar, again it has no force. The question of independence is an empirical one--either there is an independent sentence grammar, or there isn't--and cannot be decided a priori.

The second line of argument is to criticize sentence grammar as inherently incapable of providing an analysis of phenomena of various sorts. Such observations can be construed either as arguments that sentence grammar is incomplete, or as arguments against one or more of the first three properties above. van Dijk (1972) uses them to show, if I understand correctly, that sentence grammar is incomplete, that there are discourse phenomena that cannot be accounted for by a sentence grammar:

As long as S-grammars cannot provide satisfactory, general and consistent, descriptions of the structures underlying discourses, by formulating the rules which must be mastered by native speakers to be able to perform the different tasks, we have to consider them empirically inadequate (p.7).

But one can't criticize an owl for not being a partridge. This kind of criticism ignores a central thesis of sentence grammar theory. Chomskyan generative grammar and its descendants are based on a hypothesis of great theoretical and empirical importance: the existence of an independent language faculty, within which there is a sentence grammar with rather narrow domain. Insofar as sentence grammar in the Chomskyan spirit can offer only an incomplete account of some language-related phenomenon, it amounts to a claim about the nature of the phenomenon--that it is outside the domain of sentence grammar, perhaps outside the domain of the language faculty altogether, the product of some other cognitive system or systems.

The incompleteness is not an incompleteness by default or omission, but a claim, correct or incorrect, about the facts. Thus arguments of this type against sentence grammar, on the grounds that it cannot account for certain discourse phenomena, have no force, unless accompanied by a demonstration that the phenomena in question must be considered to be in the same domain as phenomena that are central to sentence grammar theory. But such a demonstration is a very difficult task--phenomena are not pre-sorted by nature in this way. There is no basis from which to argue one way or the other, save to provide support for what I have called the "strong position": to present an alternative theory which treats sentence phenomena and discourse phenomena in a single unified theory, without a distinguishable sentential sub-component. One could then attempt to compare such a theory with a sentence grammar as explanations of sentential phenomena. Lacking such an alternative, there is no ground for comparison. Along these lines, observations taken to be arguments for the incompleteness of sentence grammar could be construed as arguments against properties two and three above (hence potentially as arguments against independence) if it could be shown that the phenomena in question require a uniform treatment of discourse and sentential properties, and that the sentential properties concerned are central to sentence grammar.

One such argument is the claim that there are important parallels between properties of discourse and properties of sentences. In fact there are at least three parallels one might see between sentences and discourses. First, they both have structure. The point has been made again and again, and quite correctly, that one key to the understanding of discourse is the idea that discourses have structure. Then one might propose "grammars" of some kind for discourses, to generate texts and assign them structure. From here it is only a short step to the hypothesis that one can provide a single grammar that treats both sentence and discourse structure.

But the parallelism turns out to be rather tenuous on closer inspection. The kind of structure commonly attributed to sentences (and not just by Chomskyans) is not the same kind of structure commonly attributed to discourses (see Morgan and Sellner 1980 for more discussion). What's needed is a demonstration that the system for determining discourse structure can be extended to give a complete treatment of the syntax of sentences, a demonstration so far lacking, though not inconceivable.

A second apparent parallel is that texts, like sentences, have "meaning" in some sense of this perniciously vague term. For example, de Beaugrande (1980 p. 37) points out that meaning relations that can hold within a sentence can hold between independent sentences in a discourse. He offers the following pair from Isenberg (1971, p. 155) as illustration of this point.

Peter burned the book because he didn't like it.  
Peter burned the book. He didn't like it.

But again the observation of the parallelism is misleading, in that it obscures an important difference between the two cases in the illustration. In the first, sentential case, we understand the relation to hold because of the parts of the sentence and their mode of combination. But in the

second, discourse case, as in all cases of understood relations between independent sentences in a discourse, we must infer that the relation is to be understood to hold. Two different mechanisms are involved: in the sentential case, our knowledge of grammar--of the conventional meaning of the word because, and of just how the meanings of English expressions are related to the meanings of their parts; in the second case, our ability to make common sense inferences. The latter can be cancelled by contextual factors, in the manner of Grice's (1975) conversational implicature; the former cannot. It would be a mistake to ignore the difference.

The third parallel--anaphoric relations like some antecedent-anaphor relations, the interpretation of definite noun phrases, and so on--is similar to the previous one, in that such relations can hold either between elements within a sentence or between elements in two separate sentences in a discourse. In this case, though, the evidence suggests the necessity for a unified treatment. It is fairly clear that such matters need to be treated in extra-sentential, perhaps discourse terms. But a perfectly coherent response to such arguments is available to the proponent of the independence of sentence grammar: namely, just to yield the territory--to conclude (correctly, to my mind) that such cases are outside the domain of sentence grammar. Nothing in sentence grammar theory entails that everything that can conceivably be labelled a property of sentences must be accounted for in sentence grammar.

Another kind of criticism of sentence grammar is based on the observation that there are discourse explanations for apparently syntactic facts. There are a number of interesting attempts in the literature (see Givón 1980 for some recent examples, especially the papers by García and Erteschik-Shir). But generally the sentence grammarian can respond to such analyses in the same way as to previous case: by yielding the territory, concluding that the existence of convincing discourse explanations shows that the problem was not a syntactic one to begin with.

A related kind of argument is based on the observation that there are expressions whose meaning and/or syntactic distribution is clearly to be given in terms of discourse or functional terms. One might conclude from the existence of morphemes that function as topic or focus markers, for example, that a complete theory of sentence grammar must incorporate a treatment of notions like "focus," "topic" and the like. But there is no reason to accept this conclusion. It is no more necessary than this one: since English has pronouns like he and she whose meaning properties (hence use) are determined in part by natural gender, the theory of sentence grammar must contain a theory of physical gender. More plausibly, these are instances of the interaction of sentence grammar with other linguistic or non-linguistic cognitive systems. The existence of such interactions in no way provides arguments for the identity of the interacting systems.

A similar approach is available for dealing with "optional" rules or constructions with clear discourse value; constructions like "Y-movement," for example, that have different discourse appropriateness conditions from their un-moved counterparts. Sentence grammar need only specify which orders are possible, i.e. grammatical. The rest should follow from language-specific discourse rules, from general principles of communication, or from the interaction of grammar with other cognitive systems.

In short, such empirical arguments against the independence of sentence grammar are not convincing, taken one by one. Conceivably they could become persuasive cumulatively, by gradually reducing the domain of sentence grammar to emptiness; but that day is hardly on the horizon. In the meantime, the sentence grammarian can fairly comfortably continue to take such observations as progress in the empirical determination of the domain of sentence grammar.

### 3. The strong position

Obviously, one persuasive way to argue for the abandonment of a theory is to present an alternative that gives a superior treatment of a significant portion of the domain of the theory under attack; for example, to show how a fairly well articulated theory of discourse provides an account of some phenomenon that is central to sentence grammar. What would be required of the theory of discourse, then, is that it be complete enough for one to examine its consequences at the sentence level for naturally occurring or constructed discourse, with a degree of formal detail that approaches that of existing sentence grammars. Unfortunately, there is no theory of discourse that is that well developed. This state of affairs is hardly surprising, given the almost miraculous complexity of the mental systems that underlie our ability to produce and understand discourse. At this point such a comparison is impossible. Still, it might be useful to sketch in hypothetical terms some directions that such an enterprise might take.

To begin I need to narrow down a bit what I mean by "discourse theory." I mean any theory that attempts to satisfy two minimal conditions:

1. It attempts at least a partial account of the most striking aspect of discourse comprehension: how an understanding of a discourse is so much greater than the logical sum of the parts (i.e. sentences) that make it up.
2. It offers a definition or explication of indispensable but elusive notions like "topic," "focus," "given/new," "relevance," "coherence," and "text structure."

Such a theory might fruitfully be framed in terms of communicative actions, i.e. rules or strategies for the activity of communication, rather than rules of well-formedness. Matters of ill-formedness would be recast either as actions that violate rules of communication, or as inefficient or self-defeating communicative actions, given principles of communicative efficiency. Such a theory would also need to include (or appeal to interaction with) a theory of common-sense reasoning, and would likely include a component of language-specific conventions of discourse and of other aspects of language use (see Morgan 1978a,b for discussion).

If such a theory were available, then, it would be possible to attempt to recast central aspects of sentence grammar in terms of the independently motivated discourse theory. Again, lacking a detailed theory of this type, discussion is necessarily speculative. But a



couple of illustrations will help make clear what kind of attempt I have in mind. The strategy would be to determine how much of the semantics and syntax of sentence grammar could be treated by discourse theory, leaving only matters of morphology and the lexicon to sentence grammar.

The possibilities for semantics are rather dubious, it seems to me. There must be a discourse system for understanding connected discourse that is heavily based on inference, though perhaps with a language specific, conventional component as well (by language specific here I mean principles that differ from language community to language community, and must be learned). Then it is not out of the question that this system could provide a parallel treatment for problems of compositionality within sentences, yielding then a single uniform system for all aspects of meaning analysis, both at discourse and sentence-internal levels. But such an attempt faces large obstacles. It would be necessary to show how the compositionality that is a central tenet of sentence grammar could be dispensed with. The claim of compositionality is that any adequate theory of semantics must analyze meaning as depending not only on the elements that make up expressions, but on their syntax--on the way they are combined to make up the expression. It is hard to see how to extend an inference-based understanding system to deal naturally with the difference between the dog bit the cat and the cat bit the dog without in the process re-inventing sentence syntax, let alone how to conquer the well-known problems of the relation of syntactic properties to scope of logical operators. The likelihood of success of such an attempt is very implausible, I think, though it cannot be ruled out a priori.

The attempt to recast syntax in discourse terms is perhaps slightly less implausible. Given a theory well-developed enough to include treatment of the action of referring, and given that language communities can differ in their conventional rules of discourse, one could attempt to recast the syntactic rules for English noun phrases as English strategies for the act of referring.

The possibility of such reformulation of syntax in terms of communicative function is tantalizing, since there are obvious correlations between syntactic form and communicative function. For example, in language after language, the unmarked position of the restrictive relative clause is adjacent to the "head noun" that it "modifies," as in The woman who invented the wheel died in 70,000 B.C. Viewed purely formally, this seems just an unexplainable (though widespread) quirk. Viewed functionally, on the other hand, it is hardly surprising, since the head and accompanying relative are uttered in pursuance of a single purpose--to pick out a referent by describing its properties. Uttering the head and the relative constitutes a single communicative act, and the temporal adjacency is unsurprising, assuming some intuitively obvious principles of efficiency. From this viewpoint it is the cases where the relative is detached from the head that are surprising.

But this kind of analysis, though tantalizing, also faces serious obstacles, insofar as form does not always follow function. For example, how could such a theory explain cases of apparent functional disunity like extraposed relatives, as in the woman died in 70,000 B.C. who invented the wheel or verb-particle constructions like John put the cat out, to say

nothing of the numerous apparently purely formal conditions and constraints proposed by generative grammarians from Ross (1967) to Chomsky (1981)? The burden is clearly on the discourse theorist to show that at least a significant fraction of these problems have explanations in discourse and/or functional terms. Personally, I am skeptical that such explanations will ever be achieved. But I think the knowledge to be gained in the attempt is worth the effort.

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EVIDENCE FOR THE ELSEWHERE CONDITION IN SHONA\*

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According to the hypothesis advanced in The Sound Pattern of English (Chomsky and Halle (1968)), disjunctive ordering is a consequence of certain abbreviatory conventions. Chomsky and Halle state that subrules of rule schemata abbreviated with parentheses, Greek letter variables or angled brackets are all disjunctively ordered. A different hypothesis is proposed by Kiparsky in the paper Elsewhere in Phonology (Kiparsky (1973)) where he proposes that disjunctive ordering is a consequence of a certain formal relation between pairs of rules. He proposes there Elsewhere Condition, which states that 'Two adjacent rules of the form  $A \rightarrow B / P \_ Q$  and  $C \rightarrow D / R \_ S$  are disjunctively ordered if and only if a) the set of strings that fit PAQ is a subset of the set of strings that fit RCS and b) the structural changes of the two rules are either identical or incompatible' (p. 94). I shall show here that in the grammar of Shona, there are two pairs of tone rules, both of which must be ordered disjunctively, and both of which satisfy the requirements of the Elsewhere Condition. Moreover, neither of these pair of rules may be collapsed with any abbreviatory devices, and thus these rule pairs stand as counterexamples to the hypothesis that disjunctive ordering is a consequence of certain abbreviatory conventions. In the first section, I demonstrate the disjunctive ordering relation between Sandhi Raising and Clitic Lowering, and in the second section, I discuss the disjunctive relation between Associative Raising and Associative Lowering. In the final section, I discuss the theoretical implications of these pairs of rules, and argue that these rules provide evidence for the generalized version of the Elsewhere Condition argued for by Kiparsky.

I. Sandhi Raising and Clitic Lowering.

The first set of rules which I shall discuss is the pair of rules Sandhi Raising and Clitic Lowering. Under the provisions of Sandhi Raising, a L tone which stands before a L tone or at the end of a phrase is raised to a H tone, provided that it is immediately preceded by a H tone which stands at the end of the word. Thus, the initial L tone found in the isolation form of the nouns in (1) is changed to a H tone when it stands after a H tone, demonstrated in (2).

- |     |                     |                             |
|-----|---------------------|-----------------------------|
| (1) | munhu               | 'person'                    |
|     | akabika             | 'and he cooked'             |
|     | zviringó            | 'water pots'                |
|     | zvina               | 'four'                      |
|     | kumushá             | 'to the village'            |
| (2) | ndakátúmá múnhu     | 'I sent the person'         |
|     | Chipó ákabika       | 'and Chipó cooked'          |
|     | ndakátúmá zviringó  | 'I sent water pots'         |
|     | zviringó zvina      | 'four water pots'           |
|     | ndakámútúmá kúmushá | 'I sent him to the village' |

On the other hand, when immediately preceded by a L tone, the word initial L tone is unchanged, as demonstrated in (3). As an example, the word initial L tone of the noun munhu is not raised to a H tone when it is preceded by the L tone of the verb handáóna 'I didn't see' in the phrase handáóna munhu 'I didn't see the person'.

- |     |                         |                                    |
|-----|-------------------------|------------------------------------|
| (3) | handáóna munhu          | 'I didn't see the person'          |
|     | munhu akabíka           | 'and the person cooked'            |
|     | ndakápá múnhu zvirongó  | 'I gave the person water pots'     |
|     | zvinhu zvina            | 'four things'                      |
|     | ndakátúmá múnhu kumushá | 'I sent the person to the village' |

When a word initial L tone is immediately followed by a H tone, the Sandhi Raising rule does not apply, as is demonstrated in (4).

- |     |                  |                  |
|-----|------------------|------------------|
| (4) | badzá            | 'hoe'            |
|     | mukómaná         | 'boy'            |
|     | mapángá          | 'knives'         |
|     | ákatórá badzá    | 'he took a hoe'  |
|     | ákatórá mukómaná | 'he took a boy'  |
|     | ákatórá mapángá  | 'he took knives' |

The presence of a H tone on the second syllable of the noun badzá 'hoe' blocks the application of Sandhi Raising to the initial L tone, when preceded by the H tone of the verb ákatórá in their phrase ákatórá badzá 'he took a hoe'.

Finally, Sandhi Raising will apply to a monosyllabic L toned word, provided that the word is followed by a L tone in the next word, or else stands at the end of the phrase.

- |     |                          |                                       |
|-----|--------------------------|---------------------------------------|
| (5) | bwe                      | 'stone'                               |
|     | mbwe                     | 'tsoro pieces'                        |
|     | na                       | 'four'                                |
|     | ákaóná bwé               | 'he saw the stone'                    |
|     | ákaóná mbwé              | 'he saw the tsoro pieces'             |
|     | ákatórá ná               | 'he took four'                        |
|     | ákatórá bwé yandákaténga | 'he took the stone that I bought'     |
|     | ákatórá mbwé dzandákaóna | 'he took the tsoro pieces that I saw' |

On the other hand, when a monosyllabic L toned word stands before a H tone, Sandhi Raising is unable to apply. Thus, the L tone of the noun bwe is unchanged when preceded and followed by a H tone, although it is raised to H when preceded by H and followed by L or pause in (5).

- |     |                   |                             |
|-----|-------------------|-----------------------------|
| (6) | ákaóná bwe gúrú   | 'he saw a large stone'      |
|     | ákaóná mbwe húrú  | 'he saw large tsoro pieces' |
|     | *ákaóná bwé gúrú  |                             |
|     | *ákaóná mbwé húrú |                             |

In order to account for the alternations of L and H tone discussed here, I propose the Sandhi Raising rule, (7).

- (7) L → H / H # — {L  
#}

This rule is stated with the righthand environmental restriction expressed as a disjunction of environments. An alternative to this expression is given in (8), where a negative environmental condition prevents the rule from applying before a H tone.

(8) L → H / H # \_\_\_ ·H

Either formulation of Sandhi Lowering may be accepted, without any significant consequences for the argument which follows.

The Clitic Lowering rule is a rule which applies to a set of morphological clitic morphemes which bear underlying H tones. This rule lowers the H tone of the clitic to L when it is preceded by a H tone. In order to motivate the claim that these clitics have underlying H tone, I shall illustrate a third rule, which provides crucial evidence for the underlying tone of these clitics.

The grammar contains a Sandhi Lowering rule, according to which a H tone is lowered to L after a H tone, when the following word begins with a H tone. Thus, as demonstrated in (9), a final H tone is lowered when it is followed by the word ākafā 'he died' which has an initial H tone, but not before the word akāfā 'who died' which has an initial L tone.

(9)	murúmé	'man'
	mukádzí	'woman'
	murúme ākafā	'the man died'
	mukádzi ākafā	'the woman died'
	murúmé akāfā	'the man who died'
	mukádzi akāfā	'the woman who died'

Similarly, in (10), it is shown that words which end in the tone sequence LH do not undergo Sandhi Lowering.

(10)	badzá	'hoe'
	badzá rákāv́húnika	'the hoe broke'
	mukómaná	'boy'
	mukómaná ākafā	'the boy died'
	zviringó	'water pots'
	zviringó zvákátórwá	'the water pots were taken'
	*zviringo zvákátórwá	

Finally, in (11), it is shown that when a H toned monosyllable is followed by a H tone and is preceded by a H tone, the tone of the monosyllable undergoes Sandhi Lowering and becomes a L tone.

(11)	mbwá	'dog'
	tsv́á	'new'
	ānodá	'he wants'
	ānodá mbwá	'he wants a dog'
	ānodá mbwá tsv́á	'he wants new dogs'
	ānodá tsv́á h́urú	'he wants big new (things)'
	ānodá mbwá tsv́á h́urú	'he wants big new dogs'

If the monosyllable is preceded or followed by a L tone, the H tone of that monosyllable remains unchanged.

- |                                 |  |
|---------------------------------|--|
| (12) ākatōrā tsvā dzandākatēnga | 'he took the new (things) that I bought' |
| ākābīka tsvā hūrú               | 'he cooked the new big (things)'         |
| ākaūrāyā mbwā nebwē             | 'he killed a dog with a stone'           |
| ākaūrāyāsa mbwā hūrú            | 'he butchered a big dog'                 |

In order to account for these alternations, I propose the Sandhi Lowering rule (13).

- (13) H → L / H (#) \_\_\_ # H

I turn now to the question of the Clitic Lowering rule. When one of the clitic morphemes -wō 'too' or -zvē 'too' is preceded by a H tone, the clitic will appear with a L tone on the surface, whereas when these clitics are preceded by a L tone, they appear on the surface with a H tone.

- |               |              |
|---------------|--------------|
| (14) badzā-wō | 'hoe too'    |
| badzā-zvē     | 'hoe again'  |
| bhūku         | 'book'       |
| bhūku-wō      | 'book too'   |
| bhūku-zvē     | 'book again' |

Under the assumption that these clitics bear an underlying H tone, a rule will be necessary to lower that H tone after a H tone.

Crucial evidence in support of the assumption that these clitics bear underlying H tone is the fact that these clitics trigger the application of the Sandhi Lowering rule. Thus, as shown in (14), a word ending in the tone pattern HH changes that tone sequence to HL before the two clitics -wō and -zvē.

- |            |             |
|------------|-------------|
| (15) hārī  | 'pot'       |
| hārī-wō    | 'pot again' |
| hārī-zvē   | 'pot too'   |
| murūmé     | 'man'       |
| murūmé-wō  | 'man again' |
| murūmé-zvē | 'man too'   |

If we assume that these clitics bear an underlying H tone, the lowering of the final H tone shown above follows immediately from application of Sandhi Lowering, as shown in (16).

- |               |                 |
|---------------|-----------------|
| (16) hārī-zvē | underlying      |
| hārī-zvē      | Sandhi Lowering |

On the other hand, if these clitics are assumed to bear underlying L tones, then it will be impossible to explain the application of Sandhi Lowering to the preceding H tone.

Given that the clitics -wō and -zvē have underlying H tones, some rule will be necessary in order to account for the fact that the H tone of the clitic is lowered after a H tone. The lowering of H tone in these clitic

morphemes cannot be due to the application of Sandhi Lowering, since Sandhi Lowering crucially requires the presence of a H tone after the focal H tone. The H tone of the clitic -wó and -zvĕ, on the other hand, will be lowered regardless of the righthand context. As demonstrated in (17), monosyllabic clitics behave differently from monosyllabic nonclitics, in that only clitics are lowered unconditionally after H tones.

- |                      |                         |
|----------------------|-------------------------|
| (17) <u>ákapá-wó</u> | 'he gave too'           |
| <u>ákapá-zve</u>     | 'he gave again'         |
| <u>ákapá tsvá</u>    | 'he gave a new (thing)' |
| <u>ákapá mbwá</u>    | 'he gave a dog'         |

Accordingly, I propose the Clitic Lowering rule (18), which applies only to clitics, and lowers their H tone after a H tone.

- (18) H            ↳ L / H \_\_\_\_\_  
 [+clitic]

This rule must be ordered after Sandhi Lowering, since, as demonstrated in (19), application of Sandhi Lowering to a word final H tone prevents the subsequent application of Clitic Lowering, yielding the correct surface form hári-wó, from underlying hárf-wó.

- |                     |                 |
|---------------------|-----------------|
| (19) <u>hárf-wó</u> | underlying      |
| <u>hári-wó</u>      | Sandhi Lowering |
| <u>hári-wó</u> (NA) | Clitic Lowering |

If Sandhi Lowering were applied after Clitic Lowering, Clitic Lowering would incorrectly apply to the H tone of the clitic -wó, as shown in (20), and would thus incorrectly block application of Sandhi Lowering.

- |                       |                 |
|-----------------------|-----------------|
| (20) <u>hárf-wó</u>   | underlying      |
| <u>hári-wo</u>        | Clitic Lowering |
| * <u>hárf-wo</u> (NA) | Sandhi Lowering |

Clitic Lowering must also apply before Sandhi Raising. This is shown by the fact that if the underlying H tone of a clitic is lowered by application of Clitic Lowering, then it does not trigger application of Sandhi Raising. Thus, as seen in (21), the Clitic Lowering rule first lowers the initial tone of the clitic -wó, which prevents the H tone of that clitic from raising the initial L tone of the noun sadza.

- |                            |                 |
|----------------------------|-----------------|
| (21) <u>ákapá-wó sadza</u> | underlying      |
| <u>ákapá-wo sadza</u>      | Clitic Lowering |
| NA                         | Sandhi Raising  |
| <u>ákapá-wo sadza</u>      | phoneti output  |

If Sandhi Raising were applied before Clitic Lowering, the underlying H tone of the clitic -wó would trigger application of Sandhi Raising to the noun sadza, and then would be subsequently lowered, giving the incorrect surface form \*ákapá-wo sádza.

- |                            |                 |
|----------------------------|-----------------|
| (22) <u>ákapá-wó sadza</u> | underlying      |
| <u>ákapá-wó sádza</u>      | Sandhi Raising  |
| * <u>ákapá-wo sádza</u>    | Clitic Lowering |

To summarize the analysis presented up to this point, I have motivated three rules, viz. Sandhi Lowering, Clitic Lowering and Sandhi Raising, which apply in that order. I turn now to the evidence which demonstrates that the rules Clitic Lowering and Sandhi Raising must be applied disjunctively. A close inspection of the derivation of the underlying form ākapā-wō reveals that, if the two rules in question are applied in a conjunctive manner, Clitic Lowering will first apply to the H tone of the clitic -wō, yielding a L tone. This L tone stands after a H tone, and is at the end of an utterance, so the structural description of the Sandhi Raising rule is satisfied. Nevertheless, that rule does not apply to the final L tone of the form ākapā-wō, i.e. the rule does not give the incorrect surface form \*ākapā-wō. The Sandhi Raising rule must therefore be constrained so that it does not apply to a L tone which derives from H tone by the application of Clitic Lowering. Under the hypothesis advanced by Chomsky and Halle, disjunctive ordering of rules is a derivative property of certain types of abbreviatory devices, namely angled brackets, Greek letter variables and parenthesis notation. An inspection of the two rules Clitic Lowering and Sandhi Raising shows that there are sufficient dissimilarities in the two rules to prevent them from being collapsed with any of these devices. These rules are repeated in (23) for ease of reference.

- |      |                   |               |                        |
|------|-------------------|---------------|------------------------|
| (23) | H                 | → L / H _____ | <u>Clitic Lowering</u> |
|      | [+clitic]         |               |                        |
|      | L - H / H # _____ | {L}           | <u>Sandhi Raising</u>  |
|      |                   | {#}           |                        |

Under the hypothesis of SPE, these two rules should therefore be ordered conjunctively rather than disjunctively. However, under the Elsewhere Condition proposed by Kiparsky, the disjunctive ordering relation between Clitic Lowering and Sandhi Raising is predicted automatically. The two rules are ordered adjacently as required by the condition, and the structural changes are incompatible, since the feature H is incompatible with the feature L. Finally, every H toned clitic which undergoes Clitic Lowering stands after a H tone, and therefore also stands in the correct environment to undergo Sandhi Raising. Consequently, the required subset condition is satisfied, and the Elsewhere Condition will provide the existent disjunctive ordering between Sandhi Raising and Clitic Lowering, where the hypothesis of SPE cannot provide that relationship.

The only reasonable alternative to imposing disjunctive ordering on these rules is to restrict Sandhi Raising so that it does not apply to clitic morphemes. This restriction would therefore attempt to explain the failure of Sandhi Raising to apply in the surface form ākapā-wō by restricting Sandhi Raising to apply only in a larger domain, where clitics appear in a smaller domain. At the same time, however, this restriction would incorrectly predict that clitics with underlying L tones also do not undergo Sandhi Raising. The proposed restriction incorrectly predicts that the L toned clitics such as -po 'at there' and -ko 'to there' will never bear H tone by the application of Sandhi Raising, whereas in fact, as shown in (24), underlying L toned clitics do undergo Sandhi Raising.

- |      |                   |                   |
|------|-------------------|-------------------|
| (24) | <u>ākābīka-po</u> | 'he cooked there' |
|      | <u>ākatōrā-pō</u> | 'he took there'   |
|      | <u>ākāēnda-ko</u> | 'he went there'   |
|      | <u>ākatīzā-kō</u> | 'he ran there'    |



The hypothesis that Sandhi Raising is restricted in its application fails to account for these facts, so the original version of Sandhi Raising stands vindicated, and with it, the argument for the Elsewhere Condition.

## II. Associative Raising and Associative Lowering.

I turn now to the second pair of rules which are disjunctively ordered, again in the environment predicted by the Elsewhere Condition, namely Associative Raising and Associative Lowering. Again, it will be necessary to investigate three rules in the grammar, in order to properly understand the two rules which are crucially ordered in a disjunctive fashion.

The first rule to be considered is the Associative Lowering rule, which is discussed at length in Odden (1980). When a noun is preceded by one of a specific set of prefixes, which I refer to here as Associative Prefixes, the word initial H tone or tones of the noun are lowered after that prefix. The lowering of initial H tone is illustrated below in (25).

(25) mbwá	'dog'
né-mbwa	'with a dog'
bhúku	'book'
né-bhuku	'with a book'
hári	'pot'
yé-hari	'of the pot'
mbúndúdzí	'army worm'
sé-mbundudzi	'like an army worm'

As I have argued elsewhere, the Associative Lowering rule which lowers these H tones applies to the H tone autosegment associated with a sequence of vowels, and does not apply to the vowel segments themselves. Thus, the noun mbúndúdzí has the representation indicated in (26), with a single H tone autosegment associated with three vowels.

(26)	
------	--

I have also shown in Odden (1980) that the Associative Lowering rule applies only after prefixes with the morphological feature +Associative, and only when that prefix bears a H tone. Failure of Associative Lowering to apply after other H toned prefixes is illustrated in (27).

(27) í-mbwá	'it is a dog'
í-bhúku	'it is a book'
Vá-Húkú	'Mr. Chicken'
Vá-Mbúndúdzí	'Mr. Army Worm'

Failure of Associative Lowering to apply after L toned Associative Prefixes is demonstrated in (28).

(28) ra-Mbwá	'of Dog'	
ra-Húkú	'of Chicken'	
sa-Mbúndúdzí	'like Army Worm'	1

Accordingly, the Associative Lowering rule (29) is proposed, to account for these alternations.

(29) H → L /  $\begin{matrix} \text{H} \\ \text{[+associative]} \end{matrix}$  —

A second rule which applies in the environment of an Associative Prefix is the Associative Raising rule, which raises the initial L tone of a noun to a H tone, when that L tone is followed either by another L tone or when that L tone stands at the end of the word.

(30)	munhu	'person'
	ne-múnhu	'with a person'
	mapadzá	'hoes'
	ne-mápadzá	'with hoes'
	bwe	'stone'
	se-bwé	'like stone'
	murími	'farmer'
	ye-múrimi	'of the farmer'

In (31), nouns are preceded by an Associative Prefix when they bear an initial L tone which is immediately followed by a H tone. It can be seen that a L tone followed by a H tone is unaffected by the Associative Raising rule and retains its initial L tone.

(31)	badzá	'hoe'
	sé-badzá	'like a hoe'
	murúmé	'man'
	nó-murúmé	'with a man'
	mukómaná	'boy'
	vé-mukómaná	'of the boy'

To account for the raising of initial L tone in (30), I propose the Associative Raising rule (32).

(32) L → H /  $\begin{matrix} \text{H} \\ \text{[+associative]} \end{matrix}$  — {L} / #

This rule must also be constrained to apply only after a prefix with the morphological feature *+associative*, since other H toned prefixes such as the honorific prefix Vá- do not trigger application of Associative Raising, as demonstrated in the form Vá-Bwe 'Mr. Stone'. Furthermore, this rule must be constrained so that it applies only after a H toned Associative Prefix, since a L toned Associative Prefix does not trigger raising of the following L tone, as shown in (33).

(33)	Vá-Bwe	'Mr. Stone'
	na-Bwe	'with Stone'
	sa-Mberekó	'like Mberekó'
	ya-Munhu	'of man'

It can also be observed that the Associative Prefix itself bears a L tone on the surface when followed by a noun stem which undergoes Associative Lowering. I assume that the lowering of the Associative

Prefix itself is due to the application of a third rule, Prefix Lowering, which lowers the tone of an Associative Prefix when it is followed by a H tone.

- (34)        H                    → L / \_\_\_\_\_ H  
           [+associative]

This rule must be restricted to apply only to Associative Prefixes, since the copular prefix í- and the honorific prefix Vǎ- do not undergo a parallel lowering process before H tones, viz. í-húkú 'it is a chicken', Vǎ-Húkú 'Mr. Chicken'. The Prefix Lowering rule must be ordered after Associative Raising, since its application crucially depends on the presence of the H tone derived by application of Associative Raising, as shown in the derivation below.

- |                     |                     |
|---------------------|---------------------|
| (35) <u>né</u> -bwe | underlying          |
| <u>né</u> -bwe      | Associative Raising |
| <u>ne</u> -bwe      | Prefix Lowering     |

The Prefix Lowering rule must be ordered after Associative Lowering, since the underlying H tone of a noun stem will not trigger application of Prefix Lowering if the stem initial H tone undergoes Associative Lowering. If Prefix Lowering were ordered before Associative Lowering, Prefix Lowering would incorrectly apply to the prefix in the form né-hóvé, as shown in (36).

- |                      |                      |
|----------------------|----------------------|
| (36) <u>né</u> -hóvé | underlying           |
| <u>ne</u> -hóvé      | Prefix Lowering      |
| NA                   | Associative Lowering |
| * <u>ne</u> -hóvé    | phonetic output      |

Additional support is available for the Prefix Lowering rule, which demonstrates that the rule applies before any H tone, and not just before a H tone which derives from the application of Associative Raising to an underlying L tone. There are a few morphemes which are lexical exceptions to Associative Lowering, which have initial H tones, but whose H tones are not lowered after an Associative Prefix. As seen in (37), when one of these words is preceded by an Associative Prefix, the underlying H tone of the Associative Prefix is lowered in the presence of the underlying word initial H tone, as is predicted by the Prefix Lowering rule.

- |                         |               |
|-------------------------|---------------|
| (37) <u>úno</u>         | 'this'        |
| <u>ne</u> - <u>úno</u>  | 'with this'   |
| <u>úyá</u>              | 'that'        |
| <u>che</u> - <u>úyá</u> | 'of that'     |
| <u>úpí</u>              | 'which?'      |
| <u>se</u> - <u>úpí</u>  | 'like which?' |

It is therefore to be concluded that the Prefix Lowering rule is at least partially independent of the application of Associative Raising.

It can be demonstrated that the Associative Lowering rule iterates from left to right, since application of Associative Lowering to a following Associative Prefix will prevent that second Associative Prefix from triggering

application of Associative Lowering to the noun stem. Thus, as demonstrated in (38), Associative Lowering applies to the H tone of the prefix -ché- and the derived L tone of the prefix -che- prevents Associative Lowering from applying to the H tone of the noun hóvé.

(38) <u>né-ché-hóvé</u>		underlying
<u>né-che-hóvé</u>		Associative Lowering
<u>né-che-hóvé</u>	(NA)	Associative Lowering

Similarly, application of Associative Lowering to the second prefix -né- in (39) prevents that prefix from lowering the third prefix, which retains its H tone, and therefore triggers application of the Associative Lowering rule to the following noun stem.

(39) <u>sé-né-ché-hóvé</u>		underlying
<u>sé-ne-ché-hóvé</u>		Associative Lowering
<u>sé-ne-ché-hóvé</u>	(NA)	Associative Lowering
<u>sé-ne-ché-hové</u>		Associative Lowering

There is also evidence which shows that Associative Lowering must apply before Associative Raising, since, when two Associative Prefixes stand before a noun with a L tone followed by another L tone or a word boundary, that initial L tone of the noun will be raised by application of Associative Raising.

(40) <u>né-che-múnhu</u>		'with (the thing) of the man'
<u>sé-ne-bwé</u>		'like with stone'
<u>sé-che-mápadzá</u>		'like of the hoes'

If Associative Raising is ordered to apply before Associative Lowering, the former rule will apply to raise the initial L tone, and the latter rule will subsequently apply to lower the tone of the medial Associative Prefix, as shown in (41).

(41) <u>né-ché-munhu</u>		underlying
<u>né-ché-múnhu</u>		Associative Raising
<u>né-che-múnhu</u>		Associative Lowering

On the other hand, if Associative Lowering were ordered before Associative Raising, the H tone of the medial Associative Prefix would be lowered, and would therefore not be capable of triggering application of Associative Raising to the following noun.

(42) <u>né-ché-munhu</u>		underlying
<u>né-che-munhu</u>		Associative Lowering
* <u>né-che-munhu</u>	(NA)	Associative Raising

It must therefore be concluded that Associative Raising applies before Associative Lowering.

Given that Associative Raising applies before Associative Lowering, it can be seen in (43) that conjunctive application of these two rules to the underlying form né-bwe will incorrectly yield the surface form \*né-bwe. This derivation yields an incorrect surface form, because Associative

Lowering applies to the output of Associative Raising.

(43) <u>ně-bwe</u>	underlying
<u>ně-bwě</u>	Associative Raising
* <u>ně-bwe</u>	Associative Lowering

It is therefore apparent that Associative Lowering must be constrained in some way to prevent it from applying to the output of Associative Raising. One solution would be to reorder the rules Associative Raising and Associative Lowering. However, this solution ca-not be correct for two reasons. First, it has just been demonstrated in (38) that applying Associative Lowering before Associative Raising will incorrectly prevent Associative Raising from applying in the underlying string ně-chě-bwe. Moreover, reordering these two rules will incorrectly allow the output of Associative Lowering to serve as the input to Associative Raising. As shown in (44), application of Associative Lowering to the H tone of the noun mbwá will create the structure required for application of Associative Raising, and would then yield the incorrect surface string \*ne-mbwá instead of ně-mbwa.

(44) <u>ně-mbwá</u>	underlying
<u>ně-mbwa</u>	Associative Lowering
<u>ně-mbwá</u>	Associative Raising
* <u>ne-mbwá</u>	Prefix Lowering

Therefore, Associative Lowering and Associative Raising cannot be reordered in order to resolve the paradox of applying one rule incorrectly to the output of the other rule.

The two rules cannot be collapsed into a single rule schema employing angled brackets, parenthesis or Greek letter variables, due to the formal dissimilarities in the two rules. The rules Associative Lowering and Associative Raising are repeated in (45).

(45) H → L /	H	_____
	[+associative]	
L → H	H	_____ {L}
	[+associative]	_____ {#}

Therefore, according to the hypothesis of The Sound Pattern of English, these rules must incorrectly be applied in a conjunctive manner. However, under the Elsewhere Condition, these two rules will be applied disjunctively. The two rules are adjacently ordered, and the structural changes of the rules are incompatible. Furthermore, the subset relationship is satisfied, since the lefthand environment of both rules is identical, and the righthand condition on Associative Raising entails a more restricted environment of application for that rule than the null righthand condition on the Associative Lowering rule. Thus, any form which undergoes Associative Raising will also satisfy the structural requirements of Associative Lowering. Consequently, the Elsewhere Condition will correctly impose disjunctive ordering of the rules Associative Lowering and Associative Raising.



the Elsewhere Condition. In the case of Finnish, the subset relationship is satisfied only prior to the application of both rules, and thus argue for the second interpretation. The Diola-Fogny example allow the subset condition to be evaluated either according to (47b) or (47c), i.e. either before both rules apply, or before the second rule applies and after the first rule applies. A similar situation obtains for the Vedic Sanskrit example, where the application of the first rule does not in any way affect the applicability of the second rule. Finally, in the case of the Classical Sanskrit example, which I shall discuss at greater length, the subset relationship is not observed for the input segments, under any of the three interpretations of the subset condition (47a-c).

Kiparsky first cites two rules in Finnish, one assimilating final k to the following consonant, and the second deleting final k. He proposes that certain words terminate in underlying k, for example /menek/ 'go'. The following data are offered in support of the assimilation and deletion rules.

(48)	menek#pois	→	menep pois	'go away'
	menek#alas	→	mene alas	'go down'
	menek#	→	mene	'go'

The following rules are proposed to account for these alternations.

(49)	k	→	C <sub>i</sub> / ___	#C <sub>i</sub>
	k	→	∅ / ___	#

Final k is not deleted in the surface form menek kotiin 'go home', and Kiparsky argues that the Elsewhere Condition predicts this state of affairs. According to his analysis, the underlying form menek kotiin vacuously undergoes assimilation. Since every k in the environment #C<sub>i</sub> also stands in the environment #, the subset requirement is satisfied, and the two rules are applied disjunctively. It should be noticed, however, that the subset relationship is satisfied only prior to the application of both rules, and thus argues for the interpretation (47b) discussed above. The analysis which Kiparsky gives cannot be made consistent with the third interpretation of the subset condition, since if the subset condition is evaluated after the application of the assimilation rule, there will be numerous forms which do not satisfy the structural description of the second rule (deletion) but which do undergo the first rule (assimilation). For example, the surface form menep pois, from underlying menek pois, does not meet the structural description of the deletion rule. Consequently, the subset relationship must be evaluated before application of either deletion or assimilation for the data in Finnish.

Kiparsky suggests the possibility that his purported underlying k might be reanalyzed as an underlying h and states that 'this is of no importance to the point at issue' (p. 95). However, the choice of underlying consonant is in fact crucial to his analysis, since if the consonant in question were underlying h, and assimilation and deletion were reformulated with the consonant h as the focus for both of these rules, the surface form menek kotiin would not even satisfy the structural description of deletion, and therefore the Elsewhere Condition would not be relevant

in explain that surface form.

In fact, Guerssel (1978) has argued that the Elsewhere Condition is not needed to explain the nonapplication of deletion in the form menek kotii<sub>n</sub>. Guerssel proposes two general conditions on phonological rules, which may be roughly paraphrased as follows.

- (50) i) a rule may not affect the identity of a geminate consonant cluster unless it also affects the adjacency of the members of the cluster and
- ii) any assimilation rule deletes the boundary symbol between focus and determinant which otherwise prevents adjacent identical consonants from being interpreted as geminates, and thus subject to the preceding condition.

With these two general conditions, Guerssel argues that the nonapplication of deletion in the form menek kotii<sub>n</sub> is due to the fact that the application of the assimilation rule deletes the boundary between the words, thus rendering the deletion rule inapplicable.

Guerssel also argues that the analysis of Diola-Fogny proposed by Kiparsky does not in fact constitute an argument for the Elsewhere Condition, and can instead be taken as support for the two conditions on geminates (50i) and (50ii). Under Kiparsky's analysis, Diola-Fogny has two rules, a deletion rule and an assimilation rule. The assimilation rule assimilates a nasal consonant to the place of articulation of the following consonant, changing underlying najum#tɔ to najuntɔ 'he stopped there'. According to the deletion rule proposed by Kiparsky, a consonant is deleted in certain types of consonant clusters, including +CC clusters, as well as +C and +#C clusters. Thus, deletion changes underlying ɛkɛt#bɔ to ɛkɛbɔ 'death there'. Kiparsky invokes the Elsewhere Condition to explain the fact that the final nasal in the surface form najun#tɔ is not deleted, although the underlying nasal of the phrase ban#n̄a is deleted in the surface form ba#n̄a 'finish now'. Since, in the former example, the underlying nasal consonant undergoes the assimilation rule, and since under Kiparsky's analysis, the subset condition is satisfied ( and is satisfied at all stages of the derivation, rendering this example consistent with both interpretation (47(b)) and (47(c)) ), the deletion rule will be unable to apply to any nasal which undergoes assimilation. Nasals which do not undergo assimilation, on the other hand, are subject to deletion, as in the example ba n̄a. Under the reanalysis proposed by Guerssel, application of assimilation also entails deletion of the word boundary symbol between the word najum and the word tɔ, rendering deletion inapplicable since the structural description of the deletion rule is not satisfied by the form najuntɔ. Thus, the data of Diola-Fogny do not force the conclusion that the Elsewhere Condition is necessary, in order to account for these data. Moreover, the analysis proposed by Guerssel is simpler than that proposed by the Elsewhere condition, since, as Guerssel points out, much of the material included in Kiparsky's version of deletion and assimilation is necessary only to ensure that the subset relationship is satisfied.

Thus, out of the original four analyses proposed by Kiparsky in support of the Elsewhere Condition, two of these analyses are shown not to support the condition very strongly, since they have an alternative explanation in terms



Guerssel's constraint on assimilation rules.

The final and most problematic case for the Elsewhere Condition is the interaction between certain assimilation rules in Classical Sanskrit and a rule changing word final s to h. As observed by Kiparsky, final coronal consonants assimilate in place of articulation to a following consonant. He states that the following assimilations are encountered in Sanskrit.

- (51)  $t\#t \rightarrow t\#t$   
 $t\#c \rightarrow c\#c$   
 $s\#t \rightarrow s\#t$   
 $s\#c \rightarrow s\#c$   
 $s\#p \rightarrow \phi\#p$  or  $h\#p$   
 $s\#k \rightarrow x\#k$  or  $h\#k$   
 $s\#\bar{s} \rightarrow \bar{s}\#\bar{s}$  or  $h\#\bar{s}$   
 $s\#\bar{s} \rightarrow \bar{s}\#\bar{s}$  or  $h\#\bar{s}$   
 $s\#\bar{s} \rightarrow \bar{s}\#\bar{s}$  or  $h\#\bar{s}$   
 $s\#\bar{s} \rightarrow \bar{s}\#\bar{s}$  or  $h\#\bar{s}$   
 $s\# \rightarrow h\#$

Kiparsky proposes the following two rules to account for these alternations.

- (52)  $[+\text{coronal}] \rightarrow [\text{aplace}] / \_\_\_\_ \# \left[ \begin{array}{l} \text{aplace} \\ +\text{coronal} \\ -\text{continuant} \end{array} \right]$  Obligatory
- $\left[ \begin{array}{l} +\text{coronal} \\ +\text{continuant} \end{array} \right] \rightarrow [\text{aplace}] / \_\_\_\_ \# [\text{aplace}]$  Optional

The argument for the Elsewhere Condition in the case of these rules is that, just in case s is (vacuously) assimilated to a following dental stop, as in the form devas tisthati 'god stands', the following rule will not apply.

- (53)  $s \rightarrow h / \_\_\_\_ \#$

Under the analysis given by Kiparsky, the final consonant s of the underlying form devas tisthati undergoes obligatory assimilation to the initial dental stop t. Application of this assimilation rule to the final s prevents that consonant from being weakened to h by (53). In contrast, final s is weakened to h before the consonant kh, as in the form devah khalu, from devas khalu, since the final consonant s is not assimilated to the following velar. In order for the obligatory assimilation rule to be ordered disjunctively with final s-weakening (53), it is necessary to revise the Elsewhere Condition, with respect to the subset condition. The original subset condition is not satisfied at the stage in the derivation before assimilation applies, since there are forms which satisfy the structural description of assimilation but not s-weakening, viz devat ca, which becomes devac ca 'and from the god'. Moreover, there are also forms which undergo the assimilation rule which do not satisfy the structural description of s-weakening after application of assimilation, viz. devac ca (and in general, application of assimilation does not create any new potential input for s-weakening). Therefore, neither interpretation (47ii) or (47iii) is correct in determining whether the subset condition in the Elsewhere Condition is satisfied.

The solution proposed by Kiparsky is that the subset requirement should be modified, so that rules are disjunctively ordered if the environments of the rules are in a subset relationship, although the foci need not be in a

subset relationship. Since the environment of the assimilation rule is in a subset relationship to the s-weakening rule, the revised Elsewhere Condition will guarantee the disjunctive ordering relationship which is observed between assimilation and weakening.

The optional assimilation rule also has bearing on the Elsewhere Condition, although Kiparsky does not discuss these data. The consonant s may optionally be assimilated to the following consonant, according to the rule proposed in (52). If the consonant s is not assimilated, it will be weakened to h by application of the s-weakening rule, (53).

(54)	devaḥ pitā	'god the father'
	devaḥ pitā	id.
	devaḥ khalu	'god indeed'
	devax khalu	id.
	devaḥ kiṃ	'god what'
	devax kiṃ	id.
	devāḥ ṣaṭ	'six gods'
	devaṣ ṣaṭ	id.
	devaḥ śete	'the god slept'
	devaś śete	id.

A fact not mentioned by Kiparsky is that when s stands before s, it may optionally assimilate to that consonant, and thus by the Elsewhere Condition, will not undergo s-weakening. On the other hand, if final s does not undergo the optional assimilation rule, it will be weakened to h, since the Elsewhere Condition will therefore not impose disjunctive ordering on the two rules.

(55)	devas steghiṣyate	'the god will mount'
	devaḥ steghiṣyate	id.
	muktas syāt	'let him be free'
	muktaḥ syāt	id.

In order to restrict s-weakening without recourse to either the Elsewhere Condition or Guerssel's constraints on assimilation rules, it is necessary to reformulate weakening so that it is obligatory before any consonant except t, and optional before s, as in (56).

(56)	$s \rightarrow h / \text{_____} \# \left\{ \begin{array}{l} [-\text{coronal}] \\ [-\text{anterior}] \end{array} \right\}$	
	$\left\{ \begin{array}{l} [-\text{contin.}] \text{ Oblig} \\ [+ \text{contin.}] \text{ Optional} \end{array} \right\}$	

It would clearly miss a generalization to attempt to build the conditions into s-weakening which are necessary if that rule is to be directly restricted rather than restricted derivatively by the application of the assimilation rules in (52).

It would therefore appear that the surface optionality of weakening before s tremendously strengthens the case for the Elsewhere Condition. Since the environment of optional assimilation is a subset of the environment of weakening ( $\#[\text{aplace}]$  versus  $\#$ ), the rules are adjacently ordered and the structural changes are incompatible, the rules Optional Assimilation and Weakening will be disjunctively applied. This entails that if the first rule applies,

the second rule cannot apply to the output of the first rule. Therefore, when Optional Assimilation applies to the form muktas syāt, Weakening will not be able to apply to that output. On the other hand, if Optional Assimilation does not apply to that form, then Weakening will apply, yielding the form muktah syāt. In the latter case, Weakening is able to apply since the string muktaś syāt is not an output of the application of Assimilation.

Needless to say, these data may also be accounted for by Guerssel's constraint on assimilation rules. Under that constraint, application of the optional assimilation rule entails deletion of the boundary which stands at the end of the word in the form muktas#syāt, yielding the string muktassyāt. Weakening is no longer able to apply, since the word boundary required to trigger that rule is not encountered in the string muktassyāt. Therefore, the Sanskrit assimilation examples do not provide unambiguous evidence for the Elsewhere Condition, since the same data are automatically predicted by Guerssel's conditions on assimilation rules.

I have demonstrated here that the evidence originally cited by Kiparsky in support of the Elsewhere Condition can in fact be accounted for by another principle, Guerssel's Constraint on Assimilation Rules. However, the Elsewhere Condition is still motivated to account for the Shona data discussed in the first two sections of this paper. Guerssel's constraint will not be applicable to account for the disjunctive ordering relationship observed between those pairs of rules. The constraint proposed by Guerssel states that:

Given a feature-changing rule of the form  $X \rightarrow Y / Z$ , if the focus X takes on some or all of the features of the determinant Z, then any boundary which intervenes between Y and Z in the output of that rule will be deleted by convention. (p.233)

This constraint will not be applicable to the Shona rules Clitic Lowering (18), since that rule changes a H tone to a L tone after a H tone, and therefore does not constitute an assimilation rule. The constraint will be applicable in the case of Associative Raising, since that rule changes a L tone to a H tone after a H tone, and will therefore delete the morpheme boundary which stands between the Associative Prefix and the noun stem, changing underlying né+bwe to nébwé. However, the deletion of the morpheme boundary is irrelevant in guaranteeing the disjunctive relationship between Associative Lowering and Associative Raising, since neither rule specifies the presence of a word boundary as a condition for application of that rule. Since the Constraint on Assimilation Rules cannot account for the disjunctive ordering relationship between the pairs of Shona rules discussed here, and since the hypothesis of Chomsky and Halle also cannot account for that relationship, the Elsewhere Condition is supported as a principle of grammar.

#### Summary

I have argued here that two separate pairs of tone rules in Shona must be applied disjunctively, and that this disjunctive relationship can be predicted only by the Elsewhere Condition. These rules thus strengthen the empirical support for the Elsewhere Condition as a principle of grammar. The significance of the Shona rules for the Elsewhere Condition, and therefore for phonological theory, lies not just in the fact that the Elsewhere Condition makes the correct predictions, but rather in the fact that it makes these

predictions where other theories fail to make the correct predictions. It is not merely a question of simplicity which argues for the Elsewhere Condition in Shona, but reduces to the essential question of statability.

## NOTES

\*An earlier version of this paper was presented at the LSA Winter Meeting in San Antonio, Texas on Dec. 28, 1980. Data for this paper has been collected over the past four years from Kokerai Rugara, a native speaker of the Karanga dialect of Shona, which is a Bantu language spoken in Zimbabwe. This study has been supported in part by a University of Illinois Fellowship in Linguistics provided by the Department of Linguistics, in part by a FLAS Fellowship in African Languages provided by the African Studies Center at the University of Illinois, and partially by NSF Grant BNS-7924523. Additional information on the tonal structure of Shona may be obtained in Odden (1981).

<sup>1</sup>The principles governing the appearance of L tone before proper names in the Associative construction are discussed in Odden (1981).

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TOPIC MARKER ELLIPSIS IN JAPANESE\*

Michio Tsutsui

This is an attempt to account for the phenomenon of the ellipsis of wa, a topic marker in Japanese. First, the function of wa is reexamined, and it is demonstrated that wa is not an old information marker but a registered information marker. Then, two conditions which govern the ellipsis of wa are proposed. They are New Information Condition (NIC) and Psychological Closeness Condition (PCC). The claim of NIC is that wa which marks new information is not ellipsed. PCC, on the other hand, claims that the ellipsis of wa which marks old information has to do with the psychological distance between the interlocutors and the topic. The concept of psychological closeness is elucidated through the discussion of PCC. PCC is based on a hypothesis with regard to the question: when does the topic become psychologically close to the interlocutor? The hypothesis which is called Established Topic Hypothesis (ETH), hypothesizes that the establishedness of the topic determines the psychological distance between the interlocutor and the topic, unless his attitude toward the topic is objective.

1. Introduction

Mastering Japanese particles is probably one of the most difficult tasks for Japanese learners. It is difficult not only because their uses are peculiar, but also because there is the problem of ellipsis. As a matter of fact, some particles are frequently ellipsed in natural conversation. To provide an example,

- (1) Kimi (wa) nani (o) taberu?  
you Topic what Acc eat  
'What will you eat?'

It is ironical that, on the one hand, the Japanese teacher repeatedly has to emphasize that students should not drop any particles so that they learn the correct uses of particles, and, on the other hand, he himself has to drop them occasionally to make his talk natural. Unfortunately, in spite of its evident importance, the problem of particle ellipsis has barely been investigated. Naturally, no Japanese textbooks explain this phenomenon satisfactorily. The explanation which most of the textbooks provide is that particles drop in rapid and informal speech. However, this is not the case. There are cases in which particles drop in formal, fairly slow speech, and there are also cases in which particles never drop, no matter how rapid and informal the speech may be. To take a topic marker wa, for example, it often drops in (2), which is formal, slower speech; whereas in (3) it cannot drop, even if it is uttered rapidly in

an informal situation.

- (2) Watakusi (wa) Smith to moosimasu.  
 I that say  
 'I call myself Smith. (= I am Smith.)'
- (3) Tom{wa} ii kedo John wa dame da.  
 (\*Ø)  
 good but no good is  
 'Tom is okay, but John is no good.'

In this paper, I specifically take wa as the object of study and examine what rules govern the phenomenon of its ellipsis. In Section 2, I reexamine the function of wa. Then, in Section 3, I present two conditions which seem to govern the phenomenon in question. Section 4 summarizes the whole discussion and concludes it.

## 2. Function of Wa

Before starting discussions about wa ellipsis, it is necessary to clarify the uses of wa. This section is devoted to this purpose.

According to Kuno (1973a), wa has two uses, namely,

- (4) Wa is either thematic or contrastive.

a. Thematic:

John wa gakusei desu.  
 student is  
 'John is a student.'

b. Contrastive:

Ame wa hutte imasu ga...  
 rain falling is but  
 'Rain is falling, but...' (Kuno 1973:59)

Chafe (1970), on the other hand, remarked that wa reflects old information in contrast with ga, which reflects new information.<sup>1</sup> However, as Kuno (1973b) pointed out, this is not exactly correct. To cite his counter-example,

- (5) Watasi ni wa san-nin no musuko ga iru.  
 I with three persons of son Nom exist

Tyoonan wa kaisyain, zinan wa  
 first son company employee second son

daigaku-kyoosi, sannan wa ginkooman de aru.  
 university professor third son bank employee is  
 'I have three sons. The first son is a company employee, the second son is a university professor and the third son is a bank employee.'

(Kuno 1973b: 217, n.5)

In (5) tyoonan wa, zinan wa and sannan wa all represent new information, in spite of the fact that they are marked by wa. Alfonso (1966) also implied an idea similar to Chafe's: "GA draws attention to the word that precedes it, whereas WA directs attention to what follows after (p. 978)." Although he did not use the terms old information and new information, the implication of the above remark is the same as Chafe's idea mentioned above. To see that wa is not simply an old information marker, let me show another example:

- (6) a. Kimi-tati no dare ga gakusei desu ka.  
 you (pl.) of who Nom student is Question  
 'Who among you is a student?'  
 b. Watasi ga gakusei desu.  
 I Nom student am  
 'I am a student.'  
 c. Watasi wa gakusei desu.  
 I student am  
 'I am a student.'

To the question of (6a), both (6b) and (6c) are possible answers. The difference between (6b) and (6c) is that (6b) means 'I and only I am a student.', while (6c) implies 'As far as I am concerned, I am a student.' In other words, in (6b) the speaker knows that the other people are not students, while in (6c) the speaker does not know whether there is another among them besides him. The important thing is that watasi wa in (6c) carries new information just as watasi ga in (6b) does. The rest of the sentence gakusei desu is old information. Generally speaking, the contrastive wa reflects new information. To provide some more examples,

- (7) a. Explicit contrastive:

- A: Soto wa doo desu ka.  
 outside how is Question  
 'How is it outside?'  
 B: Ame wa hutte imasu ga kaze wa arimasen.  
 rain falling is but wind don't exist  
 'It is raining, but there is no wind.'

- b. Implicit contrastive:

John wa tenisu wa zyoozu desu.  
 tennis skillful is  
 'John (as far as tennis is concerned) is good at it.'

The thematic wa, on the other hand, usually reflects old information when it marks the main topic of the sentence. For example,

- (8) a. Anata wa gakusei desu ka.  
 you student are Question  
 'Are you a student?'

- b. Kore wa watasi no hon desu.  
 this I of book is  
 'This is my book.'

Thus, wa reflects both old information and new information.

Then, what is the basic function of wa which is common to the two uses? In my understanding, the basic function of wa is that of marking registered information. What I mean by registered information is the information which is commonly registered in the interlocutor's mind. There are two kinds of sources of registered information: (1) linguistic contexts and (2) non-linguistic contexts. The information from linguistic contexts (henceforth, linguistic information) consists of (1) anaphoric information, which is the one stated explicitly in the previous sentences, and (2) non-anaphoric information, which is the one registered in connection with the anaphoric information. The information from non-linguistic contexts, or situational information (henceforth, situational information), on the other hand, comprises (1) the information obtained through the sensory organs, (2) the information related to the time at which the conversation takes place, (3) the information related to the place in which the conversation takes place, and (4) the information registered in connection with (1), (2) and (3). It should be stressed here that registered information is not the same as old information. To make this point clear, let me use the sentences in (5) once again. In the second sentence in (5), tyoonan 'first son', zinan 'second son' and sannan 'third son' are registered information, because they were registered in the interlocutor's mind as nonanaphoric information when the noun phrase san-nin no musuko 'three sons' was introduced in the preceding sentence. Nevertheless, these three nouns carry new information as discussed above.

Generally, a concept X, which is usually expressed by a word or group of words, goes through three stages until it is established as a topic, as seen in (9).

- (9) Stage 1 (Pre-registered stage)  
 ||| X is not qualified for a topic.  
 ↓  
 X is introduced.  
 ↓  
Stage 2 (Post-registered stage)  
 X is qualified for a topic. Other concepts  
 which are related to X are also registered  
 and ready to be topics.  
 |||  
 X is presented as a topic.  
 ↓  
Stage 3 (Established stage)  
 X is established as a topic.

Needless to say, there might be cases in which X is registered as the result of the registration of another concept Y to which X is related.





- (11) \*Senkoo wa keizai de  
 major economics is and  
 boku wa ima san-nen desu ga...  
 I now junior am but  
 'My major is economics and I am a junior now but...'

Next, let us examine the case of contrastive wa.

- (12) a. Ame wa hutte imasu ga kaze wa arimasen.  
 rain falling is but wind don't exist  
 'It is raining, but there is no wind.'
- b. John wa tennis wa zyoozu desu.  
 tennis skillful is  
 'John (as far as tennis is concerned) is good at tennis.'

Kuno (1973a) states that "the contrastive wa can place nonanaphoric noun phrases in contrast (p. 46)." If this is the case, (12a) should be able to be uttered as an opening of the conversation. In my understanding, however, it is possible only if there is some non-linguistic context which registers ame 'rain' and/or kaze 'wind' in the interlocutor's mind. In other words, (12a) is unacceptable as an opening of conversation if there is no such non-linguistic context. (12a) is acceptable, of course, if it is preceded by some statement or question which registers ame and/or kaze, as the dialog in (7a) shows. Generally, when A and B are contrasted, it is not always necessary that both A and B should be registered in advance, because they are usually related concepts and if one of them is registered, the other will be automatically registered. It does not make sense to contrast two concepts which are totally unrelated to each other. Likewise, (12b) is acceptable only if John is under discussion and the preceding conversation or the situation has to do with his tennis skill. Otherwise, (12b) will be an egocentric and inconsiderate statement to the hearer, if not unacceptable.

Finally, let me introduce an interesting sentence in Kuno (1973a):

- (13) Ame wa hutte imasu ga, kasa wa motte ikimasen.  
 rain falling is but umbrella having don't go  
 'The rain is falling, but I am not taking my umbrella with me.'  
 (Kuno 1973a:46)

Assume that no mention has been made in the previous conversation of the rain that is falling now. In this case, ame is neither generic nor anaphoric. Neither is it the case that it is in contrast with kasa 'umbrella'. To account for this sentence, Kuno assumes that Japanese allows transpositions of contrastive wa. According to him, (13) is derived from (14) by the wa transposition.<sup>5</sup>

- (14) Ame ga hutte wa imasu ga, kasa o motte wa  
 rain Nom falling is but umbrella Acc taking  
 ikimasen.  
 go-not  
 'The rain is falling, but I am not taking my umbrella with me.'

According to my analysis, the two wa's in (14) are also marking registered information. Ame and kasa are marked by wa simply because ame is situationally registered, and kasa is registered in connection with the first clause when it is introduced.

To summarize the uses of wa in terms of the newness of the information it marks:

	registered information	
	new information	old information
contrastive	Ex. (7a), (7b)	*
thematic	Ex. (10c), (13)	Ex. (10a), (10b)

\* There is no case in which the contrastive wa marks old information.

### 3. Conditions of Wa Ellipsis

In the previous section, I examined the function of wa as the preliminary for the discussions on wa ellipsis. In this section, I discuss two conditions which seem to govern the phenomenon in question. Section 3.1 has a brief introduction of the two conditions and the discussion of one of them, New Information Condition; Section 3.2, the other condition, Psychological Closeness Condition.

3.1 To account for the phenomenon of wa ellipsis introduced in Section 1, I propose the following two conditions:

- (16) a. Wa is not ellipsed when it marks new information.
- b. Wa which marks old information is ellipsed when the topic is psychologically close to the speaker and he believes that it is psychologically close to the hearer too, at the moment of utterance.

I call the first condition New Information Condition (NIC) and the second one, Psychological Closeness Condition (PCC). NIC is a negative condition, that is, wa is not ellipsed when it is met, while PCC is a positive condition, that is, wa IS ellipsed when it is met. In what follows, I will discuss NIC more in detail.

As I discussed in Section 2, there are two cases in which wa marks new information: (1) the case in which wa is contrastive, and (2) the case in which wa is thematic. Now, let us see some examples of the first case. Look at the following sentence:

- (17) Ano hon wa omosiroi ga kono hon wa tumananai.  
 that book interesting but this book boring  
 'That book is interesting, but this book is boring.'

The two wa's in this sentence are obviously contrastive and mark new information. Therefore, they cannot drop.

- (18) \*Ano hon  $\emptyset$  omosiroi ga kono hon  $\emptyset$  tumaranai.

The following sentence shows an example of the implicit contrastive:

- (19) Boku wa kono wain wa suki desu.  
 I this wine fond am  
 'I (as far as this wine is concerned) like it.'

Here again, wain wa is new information and this wa cannot drop to mean (19) as seen in (20).

- (20) \*Boku wa kono wain  $\emptyset$  suki desu.  
 'I (as far as this wine is concerned) like it.'

The next example involves phrase ellipsis.

- (21) Boku wa koohii o nomimasu. Kimi wa?  
 I coffee Acc drink you  
 'I'll drink coffee. (What will) you (drink)?'

Notice that the second sentence in (21) is an ellipsed sentence. The complete form would be something like:

- (22) Kimi wa nani o nomimasu ka.  
 you what Acc drink Question  
 'What will you drink?'

But, in this case, the ellipsed part is clear to the hearer from the context and is usually omitted in conversation. In other words, nani o nomimasu ka was ellipsed because it is recoverable old information, whereas kimi wa is new information and unrecoverable if it is omitted. Thus, if wa is omitted in the second sentence, it becomes unacceptable.

- (23) \*Boku wa koohii o nomimasu. Kimi  $\emptyset$ ?

Ellipsed parts like nani o nomimasu ka in (21) are sometimes recoverable from the non-linguistic context. For example, when a teacher comes in the classroom and finds a student is missing, he may ask, "John wa?" The complete form of this sentence would be something like:

- (24) John wa doo sita?  
 how did  
 'How did John do? (What's the matter with John?)'

Here again, wa marks the new information John and cannot drop in any case.

- (25) \*John  $\emptyset$ ?

Now, let us turn to the thematic wa. Here I use the sentence in (10c) once again under a new number.

- (26) Boku wa ima san-nen de senkoo {wa} keizai desu ga...  
 {\*\emptyset}  
 I now junior is and major economics is but  
 'I am a junior now and my major is economics, but...'

As is discussed in Section 2, the wa marking senkoo, which is a sub-topic of the sentence, is thematic, but it reflects new information. The second wa is therefore not omissible. As a matter of fact, if senkoo is the main topic of the sentence, and old information, it can drop in some situations.

- (27) (Boku no) senkoo  $\emptyset$  keizai desu.<sup>6</sup>  
 I of major economics is  
 'My major is economics.'

Finally, let us examine the sentence in (28) (= (13)):

- (28) Ame {wa} hutte imasu ga, kasa {wa} motte ikimasen.  
 {\*\emptyset} {\*\emptyset}  
 rain falling umbrella having don't go  
 'The rain is falling, but I am not taking my umbrella  
 with me.'

Although the two wa's in (28) are thematic, ame wa and kasa wa are both new information. That is the reason why they cannot drop.

3.2 In Section 3.1, I argued that New Information Condition is a condition which governs wa ellipsis. In this section, I argue that there is another condition which determines wa ellipsis, namely, Psychological Closeness Condition.

Before going into the discussion, it is necessary to elucidate the concept of psychological closeness first. In this paper I use the term psychological closeness in the following sense: The referent of a topic X is psychologically close to a person P when P is not conscious of X as a being separate from himself. (Henceforth, I sometimes simply say, "the topic is close to the speaker" to mean "the referent of the topic is psychologically close to the speaker.") There is another term which represents the same concept, that is, empathy. In defining the concept of empathy, Kuno (1976) states that: "I use the term "empathy" to characterize the speaker's identification; in varying degrees, with a participant in an event. (p. 431)" A slight terminological difference between empathy and psychological closeness is that the former is a speaker-oriented term, while the latter is not necessarily so. I use the term psychological closeness in this paper (1) because I'd like to deal with anything which can be a topic (e.g., abstract ideas, events, actions), rather than just "a participant in an event" and thus it seems to be a good idea to use another term, and (2) because the term psychological closeness is more convenient to describe the situation from various viewpoints. For example, the idea (29a) is expressed as in (29b), (29c) and (29d) using this term.

- (29) a. The speaker is empathetic with the referent of the topic.  
 b. The referent of the topic is psychologically close to the speaker.  
 c. The speaker is psychologically close to the referent of the topic.  
 d. The psychological distance between the speaker and the referent of the topic is small.

We have seen in the above what psychological closeness is. The next question is: Then, when does something become psychologically close to a person? With regard to this question, I'd like to present the following hypothesis:

- (30) A concept becomes psychologically close to the interlocutor when it is well established as a topic in his mind, unless his attitude toward the topic is objective.

I call this hypothesis Established Topic Hypothesis (ETH). ETH will need more explanation. In Section 2, I discussed how a concept is established as a topic in the interlocutor's mind. ETH is the hypothesis concerning the further stage beyond the stage 3 (Established stage). Generally speaking, a topic is established when it is presented as a topic. Then, the longer it remains as a topic without being replaced by another, the more firmly it is established in the interlocutor's mind. Then, what happens in the interlocutor's mind is that he becomes unaware of the existence of the concept the topic represents, as a different being from himself. In other words, the psychological distance between the topic and the interlocutor becomes small.

The same psychological processes as mentioned above seem to take place in those concepts which have been pre-registered if the interlocutor reinforces them by continuously doing things like seeing them, hearing them, feeling them. Thus, such concepts as 'I', 'you', 'now' and 'here' are well established as a topic in the interlocutor's mind even though they are not explicitly presented as a topic. Likewise, a concept which is reinforced by continuous thinking becomes well established as a topic even if it is not explicitly stated. To put it in another way, a concept which occupies a person's mind is psychologically close to him. On the other hand, even though they are pre-registered, generic nouns are usually not well established as topics because they are not reinforced by continuous thinking or observation. Specific examples will be shown later.

Now, let us examine some data and see if what has been discussed in the above is the case. First, look at the following sentences:

- (31) a. Watasi {wa} sensei ni narimasu.  
                   { }  
                   I           teacher to become  
                   'I will become a teacher.'

- b. Smith-san, anata  $\left\{ \begin{array}{l} \text{wa} \\ \emptyset \end{array} \right\}$  sensei ni narimasu ka.  
 Mr. Smith you Question  
 'Mr. Smith, will you be a teacher?'
- c. Kanai  $\left\{ \begin{array}{l} \text{wa} \\ \emptyset \end{array} \right\}$  sensei ni narimasu.  
 my wife  
 'My wife will become a teacher.'
- d. Smith-san  $\left\{ \begin{array}{l} \text{wa} \\ ?\emptyset \end{array} \right\}$  sensei ni narimasu.  
 'Mr. Smith will become a teacher.'
- e. Smith to iu hito  $\left\{ \begin{array}{l} \text{wa} \\ *\emptyset \end{array} \right\}$  sensei ni narimasu.  
 Quotative say person  
 'A person called Smith will become a teacher.'

In (31a) and (31b), watasi 'I' and anata 'you' are the existences whose concepts are pre-registered and well established in anybody's mind. Therefore, wa ellipsis is very natural in (31a) and (31b). Similarly, kanai 'my wife', whom the speaker constantly thinks of and sees, usually has a psychological closeness to him. Thus, if the speaker believes she is close to the hearer too, wa drops. If she is actually not so close to the hearer, contrary to the speaker's belief, the statement without wa sounds somewhat egocentric to the hearer. On the other hand, the acceptability of wa ellipsis in (31d) depends on the situation. If Mr. Smith is a familiar person whom the interlocutors often see, talk about and/or think of, or have been talking about, then, wa ellipsis is natural. However, if he is only one of remote acquaintances of the interlocutors, wa ellipsis is odd. Finally, in (31e), Smith to iu hito 'a person called Smith' is the expression which is used when the interlocutors are not very familiar with him, and when Smith to iu hito is presented as a topic for the first time. Thus, wa ellipsis in (31e) is totally unacceptable.

The next set of sentences has to do with demonstratives.

- (32) a. Kore  $\left\{ \begin{array}{l} \text{wa} \\ \emptyset \end{array} \right\}$  boku no kamera desu.  
 this I of camera is  
 'This is my camera.'
- b. Ano hito  $\left\{ \begin{array}{l} \text{wa} \\ \emptyset \end{array} \right\}$  watasi no sensei desu.  
 that person I of teacher is  
 'That person is my teacher.'
- c. Sono hon  $\left\{ \begin{array}{l} \text{wa} \\ \emptyset \end{array} \right\}$  omosiroi desu ka.  
 that book interesting is Question  
 'Is that book interesting?'

Since kore 'this' in (32a) indicates what the interlocutors have been looking at, it has been situationally registered and reinforced in their minds. Thus, it is well established as a topic and wa can drop. Likewise, ano hito 'that person' and sono hon 'that book' in (32b) and (32c) have been seen by the interlocutors for some time and well established as a topic; therefore, wa ellipsis is quite natural in both sentences. The sentence in (32b) is also used when ano hito 'that person' is not in sight. Even in this case, wa ellipsis is possible, if that person is well established for some reason. (For example, the person was with them a minute ago, or the person has been a topic of the conversation.) The sentence in (32a) is also used when sono hon 'that/the book' is not in sight. This sentence, in this case, is usually used when the speaker is not very familiar with the book. Thus, wa often remains in this case.

Next, let me examine some sentences in which pre-registered information is involved.

- (33) a. Kyoo {wa} watasi no tanzyoobi desu.  
           { $\emptyset$ }  
           today I of birthday is  
           'Today is my birthday.'
- b. Sengetu no itu-ka {wa} watasi no tanzyoobi desita.  
                           {\* $\emptyset$ }  
           last month of fifth day was  
           'The fifth of the last month was my birthday.'
- c. Koko {wa} samui desu ne.  
           { $\emptyset$ }  
           this place cold is Tag Question  
           'This place is cold, isn't it?'
- d. New York {wa} samui desu ne.  
                   {\* $\emptyset$ }  
           'New York is cold, isn't it?'
- e. Kuzira {wa}honyuu-doobutu desu.  
               {\* $\emptyset$ }  
           whale mammal is  
           'A whale is a mammal.'

As is discussed in Section 2 and earlier in this section, some concepts such as this place and this moment are pre-registered and already well established as a topic. Therefore, in (33a) and (33c), wa ellipses are very natural, even if those sentences are openings of conversation. However, in normal circumstances, sengetu no itu-ka 'fifth day of the last month' and New York are not pre-registered in the interlocutor's mind; therefore, there is no way for them to be well established at the beginning of conversation. Thus, in (33b) and (33d), wa ellipsis is impossible.<sup>7</sup> Next, look at (33e). Here, kuzira 'whale' is pre-registered in the interlocutor's mind as a generic topic. Nevertheless, wa ellipsis is normally unacceptable. This is because kuzira is usually not reinforced in the interlocutor's mind as a topic by constant thinking and/or observation.<sup>8</sup>



The next examples show how the situational information affects the interlocutor's psychology in terms of wa ellipsis.

- (34) a. Shuzyutu-situ { wa } doko desu ka.  
   { ∅ }  
           operating room        where is    Question  
           'Where is the operating room?'
- b. Ginkoo { wa } doko desu ka.  
   { \*∅ }  
           bank                    where is    Question  
           'Where is a bank?'

Suppose that the speaker is in a hospital and utters (34a) to a nurse. In this case, wa ellipsis is quite natural. This is because shuzyutu-situ 'operating room' is registered and well established in the interlocutor's mind in the hospital situation. On the other hand, if (34b) is uttered to a stranger on the street, wa ellipsis is quite odd, because it sounds as if a bank were a necessary existence on the street and everybody should be familiar with it.

As the final piece of evidence for ETH, let me provide another set of sentences. They are supposed to be uttered to somebody who is looking for something.

- (35) a. Pen wa koko desu.  
           pen        here is  
           'The/A pen is here.'
- b. Pen ∅ koko desu.  
           'The/A pen is here.'

Both sentences mean 'The/A pen is here.' But the speaker's psychology at the moment of utterance is different. That is, (35a) is used when the speaker does not know exactly what the person is looking for. Thus, the implication is something like 'I'm not sure what you are looking for, but if what you are looking for is the/a pen, it is here.' On the other hand, (35b) is used when the speaker is sure what the person is looking for. The implication is thus 'I know you are looking for the/a pen, and it is here.' Thus, if the/a pen is the main concern of the interlocutors and well established as a topic at the moment of speech, wa drops; whereas, if the/a pen is not certainly the main concern of both interlocutors, and therefore not well established as a topic, it does not drop.

So far, I have examined several examples of wa ellipsis to demonstrate that ETH is valid as a basis of PCC, supposing that the speaker's attitude is not objective. However, there is another condition, as is stated in (30), which supersedes the condition of ETH. That is, if the speaker's attitude toward the topic is objective, the topic is necessarily distant from the speaker, because being objective about the topic and maintaining a psychological distance from the topic are synonymous. In what follows, I will examine some cases which reflect this condition.

First of all, let me remind the reader of the fact that wa ellipsis is the phenomenon which is usually observed only in spoken language.<sup>9</sup> What does this mean? In general, written language requires a more formal and objective attitude than spoken language does. In other words, when one writes, he usually maintains a certain amount of psychological distance between the topic and himself. This is why wa ellipsis is not observed in written language.

Next, let us examine the case which has to do with the formality level of speech.

- (36) a. Titi { wa } ima byooki desu.  
           { \*∅ }  
 father        now ill    is  
 'My father is ill now.'
- b. Too-san { wa } ima byooki desu.  
            { ∅ }  
 Daddy        now ill    is  
 'Daddy is ill now.'

The difference between the two sentences in (36) is that in (36a) a formal word titi is used to refer to the speaker's father, whereas in (36b) a casual word too-san is used to refer to the same person. Generally, when the speaker talks in a formal style, his attitude is objective and the psychological distance between the topic and himself is large. Thus, in (36a) wa cannot drop, whereas in (36b) it can drop. Similarly, when one refers to someone using his full name, the statement becomes formal and objective; when one refers to someone using his nickname, the statement becomes informal and empathetic. Thus, in (37a) wa ellipsis is unacceptable, while in (37b) it is possible.

- (37) a. Susan Smith { wa } kono gakkoo no gakusei desu.  
                           { \*∅ }  
   this school of student is  
 'Susan Smith is a student of this school.'
- b. Susie { wa } kono gakkoo no gakusei desu.  
           { ∅ }  
 'Susie is a student of this school.'

The next example is a general statement.

- (38) a. Tuki { wa } totemo kirei desu.  
           { \*∅ }  
 moon        very    pretty is  
 'The moon is very pretty.'
- b. Kyoo no tuki { wa } totemo kirei desu.  
                   { ∅ }  
 today of moon        very    pretty is  
 'Today's moon is very pretty.'



information marker. There are two kinds of registered information: linguistic information and non-linguistic (or situational) information. Linguistic information is further grouped into two kinds: anaphoric information and nonanaphoric information. Such concepts as those of the speaker, the hearer and the present time and the place where the conversation is taking place are always registered as non-linguistic information. Some generic nouns are also pre-registered.

To account for the phenomenon of wa ellipsis, I proposed two conditions: (1) New Information Condition (NIC) and (2) Psychological Closeness Condition (PCC). NIC claims that wa is not ellipsed when it marks new information. The claim of PCC, on the other hand, is that wa marking old information is ellipsed when the topic is psychologically close to the speaker and he believes that it is psychologically close to the hearer too, at the moment of utterance. The concept of psychological closeness is essentially the same as that of empathy. That is, the referent of a topic X is psychologically close to a person P when P is not conscious of X as a being separate from himself.

PCC is based on Established Topic Hypothesis (ETH), which hypothesizes that a concept becomes psychologically close to the interlocutor when it is well established as a topic in his mind, unless his attitude toward the topic is objective. When the speaker's attitude toward the topic is objective, the topic is psychologically distant from him no matter how firmly the topic may be established in his mind, and wa ellipsis does not take place. To locate NIC and PCC, NIC belongs to discourse grammar, while PCC belongs to pragmatics.

To conclude the discussions, the phenomenon of wa ellipsis seems to be the reflection of two things: (1) the newness of the topic as information, and (2) the speaker's psychology toward the topic at the moment of utterance.

#### NOTES

\*I am indebted to Seiichi Makino for a number of comments and suggestions throughout the study of this problem. Needless to say, an error or mistake that this paper might contain is mine.

<sup>1</sup>Chafe (1970, p. 233).

<sup>2</sup>This is a case in which the speaker violates the maxim 'Be relevant' of Grice's (1975) Cooperative Principle.

<sup>3</sup>Kuno (1973a) states that: "The contrastive wa, ..., can place non-anaphoric noun phrases in contrast. (p. 46)" However, wa marking senkoo 'major' in (10c) is not contrastive either.

<sup>4</sup>Generally speaking, sub-topics seem to carry new information.

<sup>5</sup>Kuno (1973a, pp. 46-47 n.7).

<sup>6</sup>In (26), boku no 'my' is usually ellipsed as redundant information by some discourse rule.

<sup>7</sup> If the speaker is in New York at the moment of utterance, wa ellipsis in (33d) is acceptable. This is because New York is this place in this situation.

<sup>8</sup> There are situations in which wa can drop even in the case of generic nouns. For example,

- (i) Eh, kuzira  $\emptyset$  sakana zya nai no?  
 What? whale fish is not Question  
 'What? Isn't a whale a fish?'

In this case, the speaker's mind is occupied by the surprising idea that a whale is not a fish, which was mentioned by someone right before, and the concept of whale is psychologically very close to him at the moment of speech.

<sup>9</sup> The only exception I have found in modern literature is the stage direction of a scenario. To the question why particle ellipses take place in stage directions, I have no answer at the moment.

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IKOROVERE MAKUA TONOLOGY (PART 3)\*

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and

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This paper concludes the description and analysis of Ikorovere (Makua) verbal tonology begun in Cheng and Kisseberth (1979, 1980). In particular, we deal with two major phenomena--(a) the shortening of long vowels before certain consonant clusters (this process was first introduced in Cheng and Kisseberth (1980), where it is referred to as VOWEL SHORTENING) and (b) the various fates met by primary high tones located (or expected to be located) on word-final vowels. Evidence is given for a rule of HIGH TONE RETRACTION as well as for a rule proposed in Cheng and Kisseberth (1979) called WORD FINAL LOWERING. HIGH TONE RETRACTION has the effect of retracting a primary high tone from the final vowel of a word and placing that high tone on the penult vowel of the word. WORD FINAL LOWERING has the effect of lowering a primary high tone on a word-final vowel. We conclude the paper with some general observations about the analysis of Makua tonology that has been developed in this and in the preceding papers in the series, and we summarize briefly what we think Makua suggests about the nature of phonological systems.

The present paper (which continues the section numbering and example numbering of Cheng and Kisseberth (1979, 1980)) concludes our description and analysis of the major tonal features of the Ikorovere (Makua) verb, as well as segmental phenomena that interconnect in a significant manner with these tonal features. We concentrate here on two major topics: the interplay between the rule of VOWEL SHORTENING (VS), which we introduced in section 7, and various segmental and tonal processes operative in the language; and the behavior of primary (i.e. non-doubled) high tones on word-final vowels. We conclude the paper with some general observations about the analysis of Makua tonology that we have developed in this and the preceding papers in the series, and we summarize briefly what we think Makua suggests about the nature of phonological systems.

8. MORE ON VOWEL SHORTENING

In section 7 we introduced a rule of VOWEL SHORTENING (VS) which deletes one mora of a long vowel when that vowel stands before either a geminate consonant or a cluster consisting of a nasal plus a true consonant. This rule, however, does not operate in the case of a long vowel that precedes a nasal plus true consonant when this sequence is in what Kiparsky (1976) analyzes as a non-derived environment (i.e. when the sequence is entirely within the same morpheme, and thus has not arisen through the combination of

morphemes; and, furthermore, the sequence has not been created by the application of a phonological rule). VS must, therefore, be restricted to applying just to inputs that have been derived, either through morphological processes or phonological processes. The only context cited in section 7 for the application of VS involved cases where a long vowel precedes geminates or nasal clusters that have their origin in verb stems of the structure  $-VC_2C_1\dots$  or  $-VNC\dots$ . There are, however, several additional contexts where VS comes into play. In this section we will examine some of these other contexts.

One environment where VS applies is provided by a verbal tense that involves a sequence of tense/aspect (TA) markers:  $/-a\bar{a}-mu-/$ . This tense is illustrated in (127) below.

- (127) k-a $\bar{a}$ -mw-a $\bar{a}$ p-a 'I was whispering'  
 y-a $\bar{a}$ -mw-e $\bar{e}$ t-a nth<sup>h</sup>ukwa 'he was walking with his stomach protruding'  
 k-a $\bar{a}$ -mw-e $\bar{e}$ t-a $\bar{a}$ -ru 'although I was walking'  
 k-a $\bar{a}$ -mw-e $\bar{e}$ t $\bar{e}$ th-a 'I was threshing'
- k-a- $\bar{n}$ -kw $\bar{e}$ c-a 'I was sweeping'  
 y-a- $\bar{n}$ -kw $\bar{e}$ c-a vyaa vyaa! 'he was sweeping'  
 y-a- $\bar{n}$ -t $\bar{i}$ ng-a 'he was expressing shyness'  
 k-a- $\bar{n}$ -l $\bar{u}$ p $\bar{a}$ t<sup>h</sup>-a 'I was hunting'  
 y-a- $\bar{n}$ -t $\bar{u}$ t $\bar{u}$ m-a tu tu tu! 'it was foaming'  
 w-a- $\bar{n}$ -k $\bar{u}$ k $\bar{u}$ t-a ku ku ku! 'it was thundering'  
 k-a- $\bar{n}$ -l $\bar{o}$ k $\bar{o}$ t $\bar{a}$ n $\bar{i}$ n-a 'I was picking up'  
 y-a- $\bar{m}$ -p $\bar{i}$ t $\bar{i}$ k $\bar{u}$ w-a pit $\bar{i}$ ku pit $\bar{i}$ ku! 'it was rolling'  
 y-a- $\bar{m}$ -p<sup>h</sup> $\bar{a}$ m $\bar{e}$  $\bar{e}$ l $\bar{a}$ c-a p<sup>h</sup>am $\bar{e}$  p<sup>h</sup>am $\bar{e}$ ! 'he was sticking things on'
- k-a $\bar{a}$ -m $\bar{u}$ - $\bar{n}$ -l $\bar{i}$ mel-a 'I was weeding it (noun class 1)'<sup>1</sup>  
 y-a $\bar{a}$ -m $\bar{u}$ - $\bar{m}$ -p $\bar{u}$ r $\bar{u}$ k $\bar{u}$ t $\bar{u}$ -a purukut $\bar{u}$ ! 'he was chewing it (noun class 1)'

We analyze the forms in (127) as having the segmental structure SP-aa-mu-(OP)-VS-a (where SP=subject prefix, OP=object prefix, and VS=verb stem). The subject prefixes have their pre-vocalic allomorphs (cf. section 4) before the  $/-aa-/$  prefix. The  $/-aa-/$  TA prefix is extensively used in Makua (cf. sections 5 and 6 for additional examples of tenses utilizing this prefix). In the present case the  $/-aa-/$  is used in conjunction with another prefix that we regard as having the basic representation  $/-mu-/$ . Just like the object prefix  $/-mu-/$  discussed in section 3, this TA prefix  $/-mu-/$  is systematically modified as the consequence of two rules.

One of these rules is u-GLIDING (u-GL), which converts the u vowel to w in front of another vowel, compensatorily lengthening that vowel in the process. u-GL has been independently motivated in sections 2 and 3 of this paper, where we show that it affects the infinitive prefix u- and the 2 p. object prefix -u-. The rule of u-GL will take an input structure such as  $/k-aa-mu-ap-a/$  and convert it to  $/k-aa-mw-aap-a/$ . (For the time being, we are ignoring matters of tone.)



The second rule elides the u of /-mu-/ when it is followed by a consonant (actually, this consonant must in turn be followed by a vowel or glide--see below). Call this rule u-ELISION (u-EL). This rule, while unnamed at the time, was discussed briefly in section 3 in connection with the object prefix /-mu-/. When u-EL applies, a cluster of m plus a consonant is created; the m then assimilates the point of articulation of the following consonant. Call this rule Nasal Assimilation (NA). NA is not, however, restricted just to clusters of m plus consonant. It also affects clusters of n plus a consonant. For example, there is a present tense morpheme -no- which optionally elides its vowel before consonants. When the o is elided, the n will assimilate to the following consonant. For example, ki-no-hák-a 'I am grinding' has an alternant pronunciation ki-ŋ-hák-a.<sup>2</sup> Given the rules of u-EL and NA, an underlying form such as /k-aa-mú-kwec-a/ will first undergo u-EL to yield /k-aa-m-kwec-a/ and this representation will in turn undergo NA to yield /k-aa-ŋ-kwec-a/. This is not, of course, the correct surface form--the change of aa to a will be discussed below.

As a consequence of u-GL (which applies when /-mu-/ precedes a vowel) and u-EL (which applies when /-mu-/ precedes a consonant), the prefix /-mu-/ rarely shows up unaltered on the phonetic surface. The only situation where /-mu-/ remains unaltered is when it is followed by a (true) consonant cluster, as in the examples k-aá-mú-ñ-límel-a and y-aá-mú-ñ-púrukútúl-a. However, there is only one situation where the TA prefix /-mu-/ is followed by a (true) consonant cluster--namely, when between the /-mu-/ and the verb stem there appears a "reduced" form of the object prefix /-mu-/. Both of the examples cited above fit this description. The underlying form of k-aá-mú-ñ-límel-a, for instance, is /k-aa-mu-mu-límel-a/. Such an example illustrates that the rule of u-EL must be applied iteratively, working from the end of the word forwards, since the object prefix /-mu-/ must undergo the rule before the rule tries to apply to the TA prefix /-mu-/. It is only as a result of the application of u-EL to the object prefix that a consonant cluster arises and blocks the application of u-EL to the TA prefix. This right-to-left iterative application of u-EL follows the general pattern observed in earlier sections of this study where such rules as VOWEL ASSIMILATION, TONE LOWERING, and u-GL were shown to operate in similar fashion.<sup>3</sup>

As noted above, application of u-GL and NA to an underlying form such as /k-aa-mu-kwec-a/ does not account for all of the phonetic changes that occur. In particular, the prefix /-aa-/ must shorten to -a- when it is followed by the consonant cluster that arises from u-EL. But, of course, this is just the rule of VS that we motivated in section 7! The derivation of k-a-ŋ-kwéc-a (as far as the segmental aspects of the matter are concerned) can now be accounted for.

(128)	k-aa-mu-kwec-a	
	k-aa-m-kwec-a	<u>u</u> -EL
	k-aa-ŋ-kwec-a	NA
	k-a-ŋ-kwec-a	VS

u-EL must precede NA because the former rule creates the cluster to which the latter rule applies. Similarly, u-EL must precede VS because the former rule creates the cluster that triggers the application of VS. There is no ordering needed between NA and VS.

With this account of the segmental structure of the /-aa-mu-/ tense behind us, we can now turn our attention to the tonal aspect of the data in (127). When the prefix /-aa-/ is pronounced as a long vowel, it is pronounced with a rising tone. We can explain this fact by assuming that the prefix has a high tone associated with the second mora of its long vowel in this tense.<sup>4</sup> Since the first mora is low-toned, the prefix will consequently be pronounced with a rising tone. If there is indeed a high tone on the second mora of /-aa-/, then we would expect this high tone to double onto the following tone-bearing element by virtue of the rule of HIGH DOUBLING (which has been amply motivated in preceding sections). The example k-aā-mū-ñ-līmel-a shows clearly that when the TA prefix /-mu-/ appears in its unaltered form, its vowel does exhibit the high tone that we predict will appear on it as a result of the doubling of the high tone on the second mora of /-aa-/. Thus it appears quite safe to conclude that the tonal structure of the first TA prefix in this construction is /-aā-/ and that /-mu-/ is basically low-toned.

Let us next consider the stem tonology in (127). We claim that the tone assignment rule given in section 2 as ITA'--namely, assign a high tone to the first (and third, if there is one) stem vowel--is applicable in the /-aā-mu-/ tense. Notice, for example, that in every case there is a high tone on the first stem vowel (cf. k-a-ñ-kwēc-a) and that the second stem vowel will also be high-toned, presumably as a result of HIGH DOUBLING, unless it is at the end of a phrase (cf. k-a-ñ-kwēc-ā vyaa vyaa!). Also, the third stem vowel is high-toned (cf. k-a-ñ-lōkōtāñh-a and y-a-m-pitīkūw-ā pitīku pitīku!) unless it happens to be the word-final vowel, in which case it is subject to the rule of WORD FINAL LOWERING discussed in section 2 (cf. y-a-ñ-tūtūm-a tu tu tu!). The vowel that follows the third stem vowel will be high-toned as a result of HIGH DOUBLING, except when it appears in phrase-final position (see examples above). The fifth stem vowel never bears a high tone (cf. y-a-m-phāmēēlāc-a phāmē phāmē!).

Recall that in those tenses where ITA' applies, object prefixes bear an underlying high tone. This high tone causes the high tone assigned by ITA' to the first vowel of the stem to be lowered (due to the rule of TONE LOWERING). The high tone assigned by ITA' to the third vowel of the stem does not get affected by TONE LOWERING, however. The data in (127) show that these observations are applicable in the /-aā-mu-/ tense. Consider the example y-aā-mū-m-pūrukūtūl-a purukūtū! The object prefix /-mu-/ (reduced to simply -m- through u-EL) bears a high tone. This high tone has caused the high of the first stem vowel to be lost (which explains why there is no doubled high on the second stem vowel). Of course, the high on the object prefix doubles onto the first stem vowel. The high tone assigned to the third stem vowel by ITA' remains unaffected by TONE LOWERING and is able to double onto the fourth vowel of the stem.

The stem tonology in (127) thus provides no difficulties at all--it simply reflects the ordinary processes that come into play when ITA' is applicable. We can therefore return our attention to the prefix tonology--in particular, to the cases where the TA /-mu-/ appears in one of its altered forms. Consider first the case where it undergoes u-GL. In (129) we illustrate the derivation that is required for an example like k-aā-mw-ēētēt<sup>h</sup>-a.

- (129) k-aā-mu-etet<sup>h</sup>-a%  
 k-aā-mu-ētet<sup>h</sup>-ā% ITA'  
 k-aā-mu-ētet<sup>h</sup>-a% WFL  
 k-aā-mū-ētēt<sup>h</sup>-a% HD  
 k-aā-mw-ētēt<sup>h</sup>-a% u-GL

The most crucial aspect of this derivation is that since /-mu-/ has received a high tone through the process of HIGH DOUBLING, when the u glides to w (and thus ceases to be tone-bearing), the high remains on the tonal tier and associates with the compensatorily introduced vowel mora produced by u-GL. This account of the data requires that we insert the compensatory vowel mora between the object prefix and the stem vowel. (130) illustrates these points a little more precisely than does (129).

- (130)  $\begin{array}{c} \text{H} \quad \text{H} \quad \text{H} \quad \text{H} \\ | \quad | \quad | \quad | \\ \text{k-aā-mu-ētet}^{\text{h}}\text{-a\%} \end{array}$  (after HD)  
 $\begin{array}{c} \text{H} \quad \text{H} \quad \text{H} \quad \text{H} \\ | \quad | \quad | \quad | \\ \text{k-aā-mw-eētēt}^{\text{h}}\text{-a\%} \end{array}$  u-GL  
 $\begin{array}{c} \text{H} \quad \text{HH} \quad \text{H} \\ | \quad | \quad | \\ \text{k-aā-mw-eētēt}^{\text{h}}\text{-a\%} \end{array}$  reassociation of "stranded" tone

One could avoid this reassociation of a stranded tone by ordering u-GL before HD, as we illustrate in (131).

- (131) k-aā-mu-ētet<sup>h</sup>-a% (after ITA' and WFL)  
 k-aā-mw-eētet<sup>h</sup>-a% u-GL  
 k-aā-mw-ētēt<sup>h</sup>-a% HD

However, we showed in section 3 that when a u vowel bearing a primary high tone glides, its high tone must reassociate with the compensatorily introduced vowel mora that follows. Given that this reassociation of a primary high must take place, subsequent to u-GL, there is no reason not to believe that a similar reassociation of a doubled high would take place. We will therefore continue to assume that the tonal rules precede the segmental rules in their relative ordering.<sup>5</sup>

We consider next the tonology of forms where the TA /-mu-/ undergoes u-EL rather than u-GL. Consider the example y-a-ŋ-kwēc-ā vyaa vyaa!. The stem tone is not problematic. The syllable yāŋ... has been represented as having a rising tone--i.e. as having the tonal sequence LH. Do our rules predict this? In (132) we give the derivation that is expected according to the analysis we have developed.

- (132) y-aā-mu-kwec-a....  
 y-aā-mu-kwēc-a.... ITA'  
 y-aā-mū-kwēc-ā.... HD  
 y-aā-ŋ-kwēc-ā.... u-EL  
 y-aā-ŋ-kwēc-ā.... NA  
 y-ā-ŋ-kwēc-ā.... VS

In (132) we have assumed that the high tone associated with the vowel of /-mu-/ as a consequence of HD will remain on the tonal tier when the u elides, reassociating with the nasal (which becomes a tone-bearing element as a result of the loss of the u). Recall from section 7 that when a long vowel with the tonal melody LH shortens via VS, the resulting short vowel bears a rising tone. In (132) we have therefore assumed that when /-aã-/ reduces via VS, the result is a rising-toned short vowel. Presumably the difference between the representation yañ... predicted in (132) and the representation yañ... given in the citation of the data in (127) would be in terms of the onset of the rise in pitch. We have no instrumental evidence that would indicate which representation is better in accord with the facts. If it should turn out that yañ... is indeed the more correct representation, all that we would need to do would be to invoke a rule that would simplify LH to H when it precedes a H in the same syllable. Thus the interaction of u-EL and the tonal structure of the prefixes in the /-aã-mu-/ tense presents no great difficulties for our analysis of Makua tone.

There are other contexts where VS applies in addition to the /-aã-mu-/ tense. For example, when a long vowel in a prefix (or series of prefixes) stands before a nasal plus consonant arising from the reduction of the object prefix /-mu-/ via u-EL, that long vowel shortens. (133) provides just one situation illustrating this point.

- (133)
- |                                 |  |
|---------------------------------|--|
| a-nóó-típúr-a                   | 'he is hoeing deeply/he will hoe deeply'     |
| a-nóó-lím-a%                    | 'he is cultivating/he will cultivate'        |
| a-nóó-húwéél-a%                 | 'he is covering with earth etc.'             |
| a-nóó-lókótánĩh-a               | 'he is picking up etc.'                      |
| a-nóó-kí-túkih-a                | 'he is causing me to be imprisoned etc.'     |
| a-nóó-kí-húkulél-a%             | 'he is sieving beer for me etc.'             |
| a-nó-ń-lówolél-a%               | 'he is transporting s.t. for him (ch.) etc.' |
| a-nó-ń-túpulél-a%               | 'he is cutting s.t. for him (ch.) etc.'      |
| a-nó-ń-térek <sup>h</sup> él-a% | 'he is cooking for him (ch.) etc.'           |

(133) illustrates the /-nóo-/ tense, which has the structure SP-nóo-(OP)-VS-a, where the verb stem is subject to ITA'. The high tone on the first mora of /-nóo-/ doubles onto the second mora. Thus this prefix is ordinarily rendered as a long level high-toned vowel. But in the last three examples in (133) we see that this long vowel is reduced to a short vowel when it stands before a cluster resulting from the reduction of the object prefix /-mu-/ to a nasal consonant in front of a stem beginning with a consonant. The derivation of a-nó-ń-térek<sup>h</sup>él-a% is shown in (134).

(134)	a-n $\acute{o}$ o-m $\acute{u}$ -t $\acute{e}$ rek <sup>h</sup> $\acute{e}$ l-a%	
	a-n $\acute{o}$ o-m $\acute{u}$ -t $\acute{e}$ rek <sup>h</sup> $\acute{e}$ l-a%	ITA'
	a-n $\acute{o}$ o-m $\acute{u}$ -t $\acute{e}$ rek <sup>h</sup> $\acute{e}$ l-a%	TL
	a-n $\acute{o}$ o-m $\acute{u}$ -t $\acute{e}$ rek <sup>h</sup> $\acute{e}$ l- $\acute{a}$ %	HD
	a-n $\acute{o}$ o-m $\acute{u}$ -t $\acute{e}$ rek <sup>h</sup> $\acute{e}$ l-a%	PFL
	a-n $\acute{o}$ o-m̃-t $\acute{e}$ rek <sup>h</sup> $\acute{e}$ l-a%	<u>u</u> -EL
	a-n $\acute{o}$ o-ñ-t $\acute{e}$ rek <sup>h</sup> $\acute{e}$ l-a%	NA
	a-n $\acute{o}$ -ñ-t $\acute{e}$ rek <sup>h</sup> $\acute{e}$ l-a%	VS

Notice that VS reduces the sequence  $\acute{o}\acute{o}$  to  $\acute{o}$ , in effect losing a high tone that is present at an intermediate structure but absent on the surface. It is this missing high tone that explains why in a-n $\acute{o}$ -ñ-t $\acute{e}$ rek<sup>h</sup> $\acute{e}$ l-a% a sequence occurs with just three high-toned elements, whereas ordinarily one only gets either a sequence of two highs or four highs (when one excludes the effects of PHRASE-FINAL LOWERING and LONG FALL--rules that were motivated in section 2).

Yet another context for VS is provided by the -al-e tenses described in section 5. Recall that these tenses have two forms--one where -al-e is suffixed to the verb stem, and another where a nasal consonant is infix ed before a stem-final consonant and -e is suffixed to the stem. The reader is referred to section 5 for many examples of this construction. For our present purposes we just need to point out that when a long vowel precedes a stem-final consonant, the infixation of a nasal in front of that consonant will create a consonant cluster that induces the shortening of this long vowel. Two distinct cases of this shortening are illustrated in (135).

(135)	k <sup>h</sup> a-y-aa-wi $\acute{h}$ - $\acute{a}$ l-e	'he hasn't brought s.t.'
	<u>or</u>	
	k <sup>h</sup> a-y-aa-wi $\acute{h}$ -e	ibid.
	a-k-e-et- $\acute{a}$ l-e%	'I haven't traveled'
	<u>or</u>	
	a-k-e $\acute{e}$ nt-e%	ibid.

In the case of k<sup>h</sup>a-y-aa-wi $\acute{h}$ -e, it is the long vowel of the stem /-wi $\acute{h}$ -/ that gets shortened before the cluster arising from nasal-infixation. In the case of a-k-e $\acute{e}$ nt-e, the long vowel that shortens has a more complex derivation, which we illustrate in (136).

(136)	a-k-aa-et- $\acute{a}$ l-e%	<u>or</u>	a-k-aa-e $\acute{e}$ nt-e%	
	a-k-aa-et- $\acute{a}$ l-e%		a-k-aa-e $\acute{e}$ nt-e%	AL-TA (see section 5)
	a-k-aa-et- $\acute{a}$ l- $\acute{e}$ %		a-k-aa-e $\acute{e}$ nt- $\acute{e}$ %	HD
	a-k-aa-et- $\acute{a}$ l-e%		a-k-aa-e $\acute{e}$ nt-e%	PFL
	a-k-ee-et- $\acute{a}$ l-e%		a-k-ee-e $\acute{e}$ nt-e%	VA
	a-k-e-et- $\acute{a}$ l-e%		a-k-e-e $\acute{e}$ nt-e%	VR
	inapplicable		a-k-e $\acute{e}$ nt-e%	VS

Notice that the infixed nasal is a tone-bearing element. In (136), it gets the high tone assigned by AL-TA (recall from section 5 that this tone assignment rule puts a high tone on the second tone-bearing element in the verb stem). The long vowel that shortens in (136) is low-toned. Thus the result is a rising tone on the syllable ..keñ... The derivation of k<sup>h</sup>a-y-aa-wiñh-e is somewhat different.

(137)	k <sup>h</sup> a-y-aa-wi <sup>h</sup> h-al-e	or	k <sup>h</sup> a-y-aa-wiñh-e	
	k <sup>h</sup> a-y-aa-wiñh-al-e		k <sup>h</sup> a-y-aa-wiñh-e	AL-TA
	k <sup>h</sup> a-y-aa-wiñh-ā <sup>l</sup> -e		k <sup>h</sup> a-y-aa-wiñh-e	HD
	inapplicable		k <sup>h</sup> a-y-aa-wiñh-e	NA
	inapplicable		k <sup>h</sup> a-y-aa-wiñh-e	VS

(We have assumed here that the infixed nasal is n and that it assimilates to the following consonant via the rule NA, which is independently motivated. But this point is not crucial to our analysis.) Notice that once again our analysis has produced an output with a rising tone on a short vowel followed by a high-toned nasal in the same syllable. But as far as we can tell, the rising tone in the syllable ..wiñ in (137) is not distinct from the rising tone in the syllable ..keñ in (136). If there is no distinction, then we will require the rule mentioned earlier whereby a rising tone is reduced to low before a high tone in the same syllable.

#### 9. WORD-FINAL PRIMARY HIGH TONES.

In this section we turn our attention to the fate of various primary high tones that are located (or would be expected to be located) on the final vowel of a word. This discussion will be somewhat incomplete since there is some evidence to suggest that the phenomena dealt with here may be sensitive to non-phonological factors that we have not yet investigated in detail. However, in the interest of completeness, we have attempted to bring to the reader's attention a variety of problems regarding word-final primary high tones.

In our discussion of ITA' in section 2, we omitted from consideration one class of infinitive forms, a class that has only a handful of members. The verbs in question are ones which have the stem structure -C<sub>1</sub>-a (i.e. there is no evidence that the stem has any vowel other than the final vowel that is always present at the end of a verb). We shall refer to such verbs as "monosyllabic" stems. The tonal pattern of such stems is illustrated in (138).

(138)	ú-k <sup>h</sup> w-ā...	ú-k <sup>h</sup> w-a%	'to die'
	ú-š <sup>v</sup> -ā...	ú-š <sup>v</sup> -a%	'to dawn'
	ú-ly-ā...	ú-ly-a%	'to eat'
	ú-w-ā...	ú-w-a%	'to come'

The left-hand column in (138) indicates the phrase-medial pronunciation of these items, whereas the right-hand column indicates the phrase-final pronunciation. It will be recalled that in other cases, the infinitive prefix u- is low-toned and ITA' assigns a high tone to the first stem vowel. Thus we would expect that ITA' would take an input such as /u-k<sup>h</sup>w-a/ and give the output /u-k<sup>h</sup>w-ā/, since the first stem vowel in the case of monosyllabic stems is the final vowel -a. The items in (138) do sometimes have a high tone on the final vowel, but this high tone appears only in phrase-final position and seems best regarded as the double of the high on the infinitive prefix. (Doubled highs do not appear on phrase-final vowels, due to the application of the rule PFL.) Thus, although ITA' predicts that a primary high should be located on the final vowel in (138), in fact no primary high appears on that vowel. However, an unexpected primary high does appear on the infinitive prefix.

We suggest that the best way to treat these facts is to allow ITA' to apply as expected, putting a high on the first vowel of the stem (the final vowel -a in these cases), but to posit an additional rule of HIGH TONE RETRACTION (HTR). HTR will say that a high tone on the final vowel of a word must retract onto the preceding vowel. HTR will be ordered so as to apply before HD, so that the retracted high will be able to double onto the final vowel. The derivations of ú-k<sup>h</sup>w-ā... and ú-k<sup>h</sup>w-a% are shown in (139).

(139)	u-k <sup>h</sup> w-a...	u-k <sup>h</sup> w-a%	
	u-k <sup>h</sup> w-ā...	u-k <sup>h</sup> w-ā%	ITA'
	ú-k <sup>h</sup> w-a...	ú-k <sup>h</sup> w-a%	HTR
	ú-k <sup>h</sup> w-ā...	ú-k <sup>h</sup> w-ā%	HD
	inapplicable	ú-k <sup>h</sup> w-a%	PFL

Further support for the rule of HTR is provided by the -ho- tense discussed in section 4. The structure of this tense is SP-ho-(OP)-VS-a, where the SP and /-ho-/ are low-toned and the verb stem is subject to ITA'. Thus we find examples like ki-ho-rúp-ā... 'I have slept', ki-ho-lím-ā... 'I have cultivated', ki-ho-kávīh-a 'I have helped'. When a monosyllabic stem appears in this tense, we get examples like those in (140).

(140)	ki-hō-ly-ā...	ki-hō-ly-a%	'I have eaten'
	a-hō-k <sup>h</sup> w-ā...	a-hō-k <sup>h</sup> w-a%	'he has died'
	ki-hō-w-ā...	ki-hō-w-a%	'I have come'

Notice that in these examples the /-ho-/, which is ordinarily low-toned, bears a high tone which doubles onto the next vowel (that doubled high being lowered by PFL when it resides on a vowel that is in phrase-final position). Given the proposed rule of HTR, the fact that /-ho-/ is high-toned in the case

of monosyllabic stems follows automatically. The derivations in (141) illustrate.

(141)	ki-ho-ly-a...	ki-ho-ly-a%	
	ki-ho-ly-ǎ...	ki-ho-ly-ǎ%	ITA'
	ki-hǒ-ly-a...	ki-hǒ-ly-a%	HTR
	ki-hǒ-ly-ǎ...	ki-hǒ-ly-ǎ%	HD
	inapplicable	ki-hǒ-ly-a%	PFL

Although examples such as those above motivate a rule of HTR, the actual conditions under which it operates require further investigation. There are conditions under which the rule of HTR clearly does not apply. For instance, we have not found any examples of the application of HTR where the vowel preceding the word-final vowel is long. This point can be seen by considering the negative past continuous tense discussed in section 6. This tense has the structure  $k^h_a$ -SP-aa-VS-a, where ITA' applies to the verb stem and none of the prefixes has a primary high tone. For example:  $k^h_a$ -y-aa-térék $k^h_a$ -a 'he wasn't cooking',  $k^h_a$ -y-aa-lókótáníh-a 'he wasn't picking up'. In the case of a monosyllabic stem, we get a form like  $k^h_a$ -y-aa-ly-a% 'he wasn't eating'. This item is low-toned throughout. There is no surface evidence whatever of the high tone that ITA' should have assigned to the first stem vowel (the final vowel here). HTR would have predicted the incorrect form \* $k^h_a$ -y-aa-ly-a%. Clearly, HTR must be blocked from applying in this example--and the most obvious means of blocking HTR is to say that the vowel preceding the word-final primary high must be a short vowel. Of course, given this constraint on HTR, we still have not derived the correct surface form  $k^h_a$ -y-aa-ly-a%. In order to do that, we need another rule that will lower a high tone that resides on the last vowel of the word. Call this rule WORD FINAL LOWERING (WFL). WFL does not affect doubled highs on a word-final vowel, so either we must formulate WFL so as to limit it to just primary highs or we must order WFL before doubled highs come into existence. For convenience we will adopt the latter approach, but see the next section for some brief remarks on the matter of distinguishing between "primary" and "doubled" high tones in rules. Given the existence of WFL, we will get a derivation such as that in (142).

(142)	$k^h_a$ -y-aa-ly-a%	
	$k^h_a$ -y-aa-ly-ǎ%	ITA'
	inapplicable	HTR
	$k^h_a$ -y-aa-ly-a%	WFL

We have ordered WFL after HTR. If the reverse order were posited, then WFL would eliminate the high tone before it ever has a chance to retract in examples like  $\underline{u}$ - $k^h_w$ -a% and  $ki$ -hǒ-ly-a%.

There is evidence that we are correct in assuming that ITA' does supply a high tone to the last vowel in the case of monosyllabic stems in the negative past continuous, even though in  $k^h_a$ -y-aa-ly-a% this high tone is entirely absent on the surface. This evidence comes from cases where the verb is in a phrase-medial position. There are two possible pronunciations



of the verb, depending on the tonal nature of the following word. In certain verb tenses in Makua (including the negative past continuous), a noun after the verb may appear in two distinct tonal forms. One of these forms will be referred to as the "focused" form of the noun, the other being the "non-focused" form. (See Stucky (1979) for some discussion of the phenomenon in the Imithupi dialect of Makua.) In the non-focused form, the noun retains its underlying high tones, while in the focused form the noun loses the first high tone from its underlying representation. Since many nouns have just a single underlying high tone, this means that in their focused form such nouns are pronounced without any high tones (all things being equal--which is not always the case, as we show immediately below). With this much background, consider the examples in (143).

- (143)  $k^h a-y-aa-p\acute{u}p\acute{u}t^h-a$   $i k\acute{u}w\acute{o}$  'he wasn't washing clothes[non-focused]'
- $k^h a-y-aa-p\acute{u}p\acute{u}t^h a$   $i k\acute{u}w\acute{o}$  'he wasn't washing clothes[focused]'
- $k^h a-y-aa-ly-a$   $m\acute{a}s\acute{a}m\acute{b}\acute{a}r\acute{a}$  'he wasn't eating cassava leaves[non-focused]'
- $k^h a-y-aa-ly-\acute{a}$   $m\acute{a}s\acute{a}m\acute{b}\acute{a}r\acute{a}$  'he wasn't eating cassava[focused]'

In (143) we have given examples with a polysyllabic stem like /-puput<sup>h</sup>-a/ and a monosyllabic stem like /-ly-a/. Notice that when the verb is followed by a non-focused noun, no high tone appears on the final vowel of the monosyllabic verb stem (nor on the final vowel of /-puput<sup>h</sup>-a/, but more on this particular verb type later). Apparently, WFL is applicable here, assuming that indeed ITA' has assigned a high tone to the word-final vowel. The case where a focused noun follows the verb is different. Here a primary high does appear on the last vowel of the monosyllabic stem (but not on the last vowel of the polysyllabic stem /-puput<sup>h</sup>-a/--again, see below). And this primary high tone doubles onto the first tone-bearing element in the focused noun. In other words, even though a focused noun loses its first underlying high tone, it may acquire a phonetic high on its first tone-bearing element as a result of HD.<sup>6</sup>

The data in (143) show that while WFL applies to /k<sup>h</sup>a-y-aa-ly- $\acute{a}$ / when this form is at the end of a phrase, it also applies when this form is followed by a non-focused noun. WFL does not apply when a focused noun follows. Thus it appears that the conditions for the application of WFL must take into considered the distinction between focused and non-focused nouns. At this point it is not clear precisely how this contrast should be incorporated into the formulation of WFL, thus we must leave this matter as a problem for further research. What is crucial here is that (143) clearly indicates ITA' does place a high on word-final vowels, since this high tone does manage to surface just in case the verb is followed by a focused noun.

Further evidence that HTR does not apply to a word-final primary high where the preceding vowel is long is provided by the consecutive tense discussed in section 6, which has the structure k<sup>h</sup> $\acute{a}$ -SP-aa-VS-a. The prefix k<sup>h</sup> $\acute{a}$ - fails to trigger HIGH DOUBLING (the only exception we know to this rule), the other prefixes are low-toned, and the verb stem undergoes ITA'. Examples:

k<sup>h</sup>ā-y-aa-t<sup>h</sup>āw-ā... 'and then he ran away', k<sup>h</sup>ā-y-aa-lōkōtānīh-a 'and then he picked up'. When a monosyllabic stem appears in this construction, we get examples like those in (144).

- (144) k<sup>h</sup>ā-w-aa-vy-a rfi! 'and it burned completely'  
 k<sup>h</sup>ā-y-aa-ly-a nek<sup>h</sup>uu! 'and he ate until he was nearly full'  
 k<sup>h</sup>ā-w-aa-ŷ-a ŋgaa! 'and it was morning, and you could see every-where'

The verb words in (144) contain no high tones except the high associated with the prefix k<sup>h</sup>ā-. Thus the high tone assigned by ITA' to the first stem vowel-- which in these cases would be the final vowel--does not appear at all. Its absence can be attributed to the application of WFL. But notice that in order to get WFL to apply it must be the case that HTR fails to apply, and the reason that it fails to apply apparently is the long vowel that is in the penult syllable of the verb word. It should be noted that the consecutive tense is never followed by a focused noun, thus there are no situations where the high tone assigned by ITA' actually appears in connection with monosyllabic stems in this construction.<sup>7</sup>

In the preceding discussion, we have seen that when HTR fails to retract a high tone from a word-final vowel, WFL will lower that high both in phrase-final position and before a non-focused noun. The high will remain, however, when it is followed by a focused noun. But this discussion has been centered on a high tone assigned by ITA' to the first vowel of a stem. Recall that ITA' also assigns a high tone to a third stem vowel. We turn now to the case where the third stem vowel is also the final vowel of the word.

Recall our account in section 2 of an infinitive verb such as u-lōwōl-a. We proposed the following derivation.

- (145) u-lowol-a  
 u-lōwol-ā ITA'  
 u-lōwol-a WFL  
 u-lōwōl-a HD

In other words, we suggested that even though items such as u-lōwōl-a do not show any trace of a high tone on the word-final vowel (neither in the event the infinitive is phrase-final nor in the event it is phrase-medial), ITA' should be permitted to place a high on that vowel. And we posited a rule of WORD FINAL LOWERING to lower this high tone. We now see that this rule is, apparently, well-motivated, since it is required on independent grounds to account for examples such as k<sup>h</sup>ā-y-aa-ly-a maŷāmbāra and k<sup>h</sup>ā-y-aa-ly-a nek<sup>h</sup>uu! The alternative approach to items like u-lōwōl-a would be to constrain ITA' so that it cannot place a high tone on the word-final vowel in such cases. But such a constraint is not well-motivated, since we have seen that ITA' can place a high tone on the word-final vowel when it is the first vowel of the stem.

Assuming that it is correct to allow ITA' to apply in the derivation of u-lɔwɔl-a, we must examine how the rule of HTR fits into the picture. This rule says that a word-final high tone retracts onto the preceding vowel, if that vowel is short. Recall also that HTR applies before WFL. Thus it would seem that HTR should apply in the course of the derivation of u-lɔwɔl-a. But if HTR does apply, retracting a word-final high onto the penult vowel, there is no surface manifestation of this retracted high. In particular, it does not double onto the following vowel. The correct phrase-medial pronunciation of u-lɔwɔl-a is with a low-toned word-final vowel; \*u-lɔwɔl-ā... is incorrect. There is a way in which HTR can be allowed to apply in the derivation of u-lɔwɔl-a without this retracted high actually being manifested on the surface--namely, by ordering HTR before TONE LOWERING (TL). TONE LOWERING was first introduced in section 3 and given additional support in section 4. It has the effect of lowering any number of consecutive highs after a high (we are speaking here, of course, with respect to primary high tones, not doubled highs). The derivation of u-lɔwɔl-a..., under the proposed analysis, is shown in (146).

(146)	u-lowol-a...	
	u-lɔwɔl-ā...	ITA'
	u-lɔwɔl-a...	HTR
	inapplicable	WFL
	u-lɔwɔl-a...	TL
	u-lɔwɔl-a...	HD

In the preceding analysis of u-lɔwɔl-a, WFL would not actually be involved in the derivation. An alternative account exists that would make use of WFL. In this account, HTR would be modified so as to prevent it from applying in the derivation of u-lɔwɔl-a. For example, we could stipulate that a high tone cannot retract onto a vowel if that vowel is preceded by a high-toned vowel. Such a constraint would bar HTR from applying to the representation /u-lɔwɔl-ā/, thus permitting WFL to come into play to lower the word-final high. Given the data so far considered, there is no strong reason to prefer one of the above alternatives over the other.

At this point, let us return to the examples cited in (143) involving the stem /-puput<sup>h</sup>-a/. In the negative past continuous, no high tone shows up on the final vowel of the verb--neither when it is followed by a non-focused noun (cf. k<sup>h</sup>a-y-aa-pūpūt<sup>h</sup>-a ikūwo) nor when it is followed by a focused noun (cf. k<sup>h</sup>a-y-aa-pūpūt<sup>h</sup>-a ikuwo). We know from examples involving monosyllabic stems that WFL is blocked from applying before a focused noun. Thus it would seem as though the data in (143) suggests strongly that it is not WFL that is responsible for the absence of a high tone on word-final vowels in the case of stems like /-lowol-a/ and /-puput<sup>h</sup>-a/. For if it were WFL that was responsible, then the high tone should appear on the word-final vowel before a focused noun. If WFL is not at work, then the derivation given in (146)--which combines HTR with TL--must be correct.

The situation, however, is more complex. Consider the data in (147).



In (148), WFL applies before a non-focused noun but fails to apply before a focused noun. The rules of LONG FALL (LF), VOWEL LOWERING (VL), VOWEL ASSIMILATION (VA), and VOWEL REDUCTION (VR) have been extensively discussed in earlier sections of this study.

But if we assume that WFL is blocked from applying before a focused noun, then we still have no explanation for the failure of a high tone to appear on the word-final third stem vowel in  $k^{ha}y\text{-}aa\text{-}p\acute{u}p\acute{u}t^{h-a}$  ikuwo. Thus neither of the analyses that we have sketched accounts for this particular fact.

We must, then, find some explanation for why there is no trace of the word-final high in the case of  $k^{ha}y\text{-}aa\text{-}p\acute{u}p\acute{u}t^{h-a}$  ikuwo while this high appears on the word-final vowel in  $k^{ha}y\text{-}\acute{o}\text{-}\acute{o}rel\text{-}\acute{e}$  iheera. We suggest (quite tentatively) that the difference has to do with the fact that in the former case there is a primary high on the first vowel of the stem while that high tone is absent in the latter case due to the application of TONE LOWERING. (It is the high-toned object prefix that induces the loss of the high tone from the first stem vowel--thus we can begin to see why the presence of an object prefix has such an impact on the tonal behavior of the word-final high tone.)

Suppose that the tonal difference cited above is indeed the critical factor. Now we can return to a consideration of our alternative analyses of the loss of high tones from word-final third stem vowels. We begin again with the analysis whereby HTR affects such vowels. We will need to permit HTR to apply to all high tones of the specified type except when they are both preceded by two low-toned vowels and followed by a focused noun. With this stipulation on HTR, the rule will operate in the case of a representation like  $/k^{ha}y\text{-}aa\text{-}p\acute{u}p\acute{u}t^{h-a}$  ikuwo/ but not in the case of  $/k^{ha}y\text{-}aa\text{-}\acute{a}\text{-}urel\text{-}\acute{a}$  iheera/. (We assume here that TONE LOWERING will precede HTR.) Notice that this account still requires that WFL be constrained so as to not apply to a word-final high tone before a focused noun. This constraint on WFL is required because in the case of a representation like  $/k^{ha}y\text{-}aa\text{-}ly\text{-}\acute{a}$  mašambara/, HTR cannot apply due to the preceding long vowel, and in the case of  $/k^{ha}y\text{-}aa\text{-}\acute{a}\text{-}urel\text{-}\acute{a}$  iheera/, HTR cannot apply because of the restriction that HTR is blocked when two low-toned vowels precede and a focused noun follows; but in both instances WFL also fails to apply. Thus this approach to the loss of high tones from word-final third stem vowels necessitates constraints on both HTR and WFL which refer to focused nouns.

On the other hand, if we assume that HTR is not applicable to high tones on third stem vowels and that it is WFL that is responsible for their loss (when indeed they are lost), then it will be WFL that must be constrained so that it fails to apply to a high that is preceded by two low-toned vowels and followed by a focused noun. (This account presupposes that TL precedes WFL.) Under this analysis, both  $/k^{ha}y\text{-}aa\text{-}ly\text{-}\acute{a}$  mašambara/ and  $/k^{ha}y\text{-}aa\text{-}\acute{a}\text{-}urel\text{-}\acute{a}$  iheera/ will fail to undergo WFL since the word-final high is preceded by two low-toned vowels and is followed by a focused noun. On the other hand, WFL will apply to  $/k^{ha}y\text{-}aa\text{-}p\acute{u}p\acute{u}t^{h-a}$  ikuwo/ since while this word-final high is followed by a focused noun, it is not preceded by two low-toned vowels. This analysis does not require that HTR be constrained in any way with reference to focused nouns.

Further data bearing on the behavior of high tones associated with a word-final vowel is provided by the -no- tense. The structure of this tense is SP-no-(OP)-VS-a. The SP and the TA prefix /-no-/ are low-toned; the verb stem undergoes ITA'. Examples are given in (149).

- (149) ki-no-vāh-ā... 'I'm giving s.t. away'  
 ki-no-līm-ā... 'I'm cultivating'  
 ki-no-thūmīh-a 'I'm selling s.t.'  
 ki-no-hūkūl-a 'I'm sieving s.t.'  
 ki-no-lēéhēr-ā... 'I'm ordering s.t.'  
 ki-no-híyérēr-ā... 'I'm balancing s.t. (on the head)'  
 ki-no-lókhótānīh-a 'I'm picking s.t. up'

This particular verb tense occurs regularly with a focused noun after it. When we have a monosyllabic stem, we get a form like ki-no-ly-ā mēele 'I'm eating millet'. Notice that the word-final vowel receives a high tone through ITA' (since the word-final vowel is the first vowel of the verb stem) and this high tone escapes both HTR and WFL. It simply remains on the word-final vowel, doubling onto the first tone-bearing element in the focused noun that follows.

A form like ki-no-ly-ā mēele is to be contrasted with an example such as ki-hō-ly-ā yoólya 'I have eaten the food [non-focused]'. In the former case, HTR has failed to apply. In the latter case, it has applied. The critical difference seems to be simply that in the former case the noun is focused, in the latter case it is non-focused. Thus it seems that regardless of anything else we might say, there must be a constraint on HTR that restricts its application before a focused noun.

If we assume that analysis of word-final third stem vowels which invokes the widespread application of HTR, then we have already claimed that HTR is blocked after two low-toned vowels in the event that a focused noun follows.<sup>9</sup> If we assume that analysis of word-final third stem vowels which invokes the widespread application of WFL (and the non-application of HTR), then in order to explain the non-application of HTR to ki-no-ly-ā mēele we will have to add a constraint blocking HTR before a focused noun. Consequently, we have arrived at the situation where in both of our analyses there must be a constraint on both HTR and WFL that makes reference to focused nouns. Thus we have little grounds for choosing between these two analyses.

The -no- tense provides more data concerning word-final third stem vowels. Consider the data in (150).



There is also a future tense form in Ikorovere that is characterized by the assignment of a high tone to the second stem vowel; if this vowel happens to be word-final, the high remains there. Some examples:

- (152) ki-néé-lim-é meélo 'I'll hoe tomorrow'  
 ki-néé-lokót<sup>h</sup>-é meélo 'I'll pick up tomorrow'  
 ki-néé-lokótānih-e meélo 'I'll pick up tomorrow'

At the present time, we have no explanation to offer as to why the word-final high tones in these tenses fail to undergo the rules of HTR and WFL. We do know that these two tenses have some special syntactic properties, and our guess is that there will be many links between the behavior of word-final primary high tones and syntactic (or perhaps even semantic or pragmatic) considerations. But an understanding of these links must await further research.

## 10. CONCLUSION

In this paper and in the preceding papers in the series, we have proposed to account for the immensely complex tonal pattern of the Ikorovere (Makua) verb by invoking a fairly small set of tone rules which, in conjunction with a fairly small set of segmental rules, produce the required surface forms from underlying representations which, while not "abstract" in the sense of containing "imaginary segments", nevertheless do often differ substantially from their surface realizations.

A few fairly general remarks are in order concerning our analysis. First, we have in general taken the tack of allowing our rules to apply in the most general form possible, invoking subsidiary rules to explain apparent instances of the failure of the general rule to apply. Call this the "overgeneralization plus patch-up strategy". The alternative is to somehow place special constraints on the general rule, blocking its application in the required environments. Call this the "rule constraint strategy".

For example, we posited a very general rule of HIGH DOUBLING that simply says that a high tone doubles onto the following tone-bearing element. But then we added the rules of PHRASE FINAL LOWERING and LONG FALL to account for the absence of the doubled high on phrase-final vowels and on the second mora of a long vowel in the context \_\_\_C<sub>0</sub>V%. This represents the "overgeneralization and patch-up strategy". The alternative would have been to write into HIGH DOUBLING conditions that would prevent the rule's application in the two contexts mentioned above. This is the "rule constraint strategy".

In the above case, we have given no empirical evidence establishing the correctness of our strategy. We do not currently have any unambiguous empirical data bearing on the problem, thus for the time being at least we must content ourselves with theoretical considerations. We believe that the overgeneralization plus patch-up strategy is a most reasonable one when both the general rule and the patch-up rule are highly natural phonological processes. HIGH DOUBLING is a widespread rule in Bantu, as is PHRASE FINAL LOWERING. The patch-up rule LONG FALL is perhaps less well-motivated on cross-linguistic grounds, but there do seem to be analogues where high tones



on penult vowels become falling-toned. Thus we conclude that the over-generalization plus patch-up strategy is an appropriate one in the present case.

We followed this same strategy when it came to the tone assignment rule ITA'. We allowed this rule to apply in a totally general fashion, putting a high tone on the first and third stem vowels regardless of whether these vowels were word-final or not. We then invoked HIGH TONE RETRACTION and WORD FINAL LOWERING to explain the absence of the expected high tone on word-final vowels. The alternative strategy would have involved constraining ITA' somehow so that in some cases it would assign a high tone to a vowel other than the first stem vowel (in cases like *ki-hó-ly-a* 'I have eaten') and in other cases would fail to assign a high tone at all. However, in this instance we found empirical evidence to support the overgeneralization plus patch-up strategy, since under certain conditions the high tone does in fact appear on the word-final vowel as predicted.

A second general remark about our analysis is in order. Namely, we have shown that there exists a need to distinguish between primary high tones and doubled high tones. For example, TONE LOWERING affects a primary high that is preceded by a primary high. PHRASE FINAL LOWERING and LONG FALL affect only doubled highs. In the Imit<sup>h</sup>upi dialect of Makua, the need to distinguish between primary highs and doubled highs is even more pervasive (see Cheng and Kisseberth, forthcoming). In the present study, we have attempted to use rule ordering to distinguish between primary and doubled highs. Another approach to the problem would be to provide a structural distinction. This could be achieved if we did not have HIGH DOUBLING convert the structure

$$\begin{array}{c} H \quad H \\ /u-lókotánih-a/ \end{array}$$

to the following:

$$\begin{array}{c} H \quad H \quad H \quad H \\ /u-lókotánih-a/ \end{array}$$

but instead had it yield the output:

$$\begin{array}{c} H \quad H \\ /u-lókotánih-a/ \end{array}$$

--that is, if HIGH DOUBLING would not add H's to the tonal tier but instead add association lines between H's on the tonal tier and the tone-bearing unit that follows the tone-bearing unit to which the H's are underlyingly associated.

Given this reformulation of HIGH DOUBLING, then we have a structural difference between a vowel bearing a primary high and a vowel bearing a doubled high. The vowel bearing the primary high appears in the structure:

$$\begin{array}{c} H \\ / \quad \backslash \\ - \quad V \end{array}$$

while a vowel bearing a doubled high appears in the structure:



(V here actually stands for any tone-bearing unit, whether a vowel or a nasal). We suspect that this structural distinction may in fact be the appropriate device for distinguishing between primary and doubled highs, rather than rule ordering, but this point will have to be explored in depth at a later time. In particular, it will need to be determined whether a formulation of HIGH DOUBLING that adds association lines (rather than adding H's to the tonal tier) will permit a satisfactory account of the principle of high tone preservation discussed in section 6.

A third, very brief, remark about our analysis remains to be made. Throughout we have had HIGH DOUBLING apply before the segmental rules of VOWEL REDUCTION and VOWEL SHORTENING. Whether this ordering is by any means a necessary one depends on the precise formulation of HIGH DOUBLING and on the precise way in which VOWEL REDUCTION and the high tone preservation principle of section 6 work. Since these are matters that must still be resolved, we do not claim to have established the necessity for applying HIGH DOUBLING before VOWEL REDUCTION and VOWEL SHORTENING--although this ordering has permitted the most straightforward illustration of the way in which the rules of tonology interact with the segmental rules in Makua.

What has Makua told us about the nature of phonology? We believe that it has told us a great deal. The tonal system of Makua is extremely complex, but it is a system that operates with amazing regularity (we know of just one truly exceptional fact in the verbal system--namely, the prefix k<sup>h</sup>ā- in the consecutive tense does not induce HIGH DOUBLING). Not only is it regular, it is fully productive. Every verb stem in the language (whether of Makua origin or borrowed from Swahili) behaves in accordance with the set of rules presented here. The system is regular, it is productive, but it is by no means a "transparent" system. The underlying forms are often at considerable variance from their surface manifestations--underlying high tones sometimes do not appear on the surface, underlying low tones may become high tones, underlying vowels do not always surface--indeed as many as four vowels in a row may delete, etc. The rules involved are not superficially true--e.g. TONE LOWERING does not allow a high tone immediately after another high tone, but of course on the surface there are many high tones that are immediately preceded by a high tone. Similarly, HIGH DOUBLING says that a vowel that follows a high-toned vowel will also be high-toned. But there are many instances (for a whole variety of reasons) where this is not true.

We conclude, then, that phonological systems may be very complex, very regular, very productive, very abstract (in the sense of containing representations that are substantially different from the surface forms and containing rules that are not at all "transparent").

## NOTES

\*We would like to thank the University of Illinois Research Board, the African Studies Program of the University of Illinois, and the National Science Foundation (Grant No. BNS-7924523) for their support of the research that we have reported on in this paper. All of the data presented have been collected from S.A.C. Waane--our gratitude to him is such that we shall never be able to express it.

<sup>1</sup>Makua nouns follow the usual Bantu pattern whereby they are organized into sets which are referred to as "noun classes". In most Bantu languages, each noun class has associated with it a particular object prefix that a noun of this class triggers on the verb. In Makua, however, there are just two noun classes that trigger object prefixes on the verb. One of these noun classes we refer to as "noun class one", and it triggers the object prefix /-mu-/, which is the same object prefix that is used to refer to a third person (child).

<sup>2</sup>Some details concerning nasal assimilation remain to be determined. For example, both n and m occur before the glides w and y in at least some contexts. We do not have sufficient data at present to determine fully how the nasals of /-mu-/ and /-no-/ behave when they come to stand in front of a glide via the dropping out of the u and o vowels in these prefixes.

<sup>3</sup>We have indicated that u-EL does apply in the environment of a consonant followed by a glide. This can be seen from example k-a-ŋ-kwéc-a. Thus we have suggested that u-EL is blocked just in case a cluster of nasal plus true consonant follows.

<sup>4</sup>It is often the case in Makua that the tonal shape of a certain prefix varies depending on the tense it is being used in. For instance, in section 4 we saw that -ho- is low-toned in the construction ki-ho-húkúl-a 'I have sieved', but high-toned in the construction k-a-hó-húkúl-a 'I sieved'.

<sup>5</sup>In section 7 we gave a possible argument for ordering LONG FALL after the rule of VOWEL SHORTENING. With this ordering we would be able to explain why in u-kí-vv-a 'to kill me' from /u-kí-ív-a/ (this form presupposes the prior application of ITA', TL, and HD--see derivation (118) in section 7) there is no surface evidence of LONG FALL having applied. We do not believe that this argument is entirely conclusive, and the question of the relative ordering of the tone rules and the segmental rules is by no means a straightforward one. See section 10 of this paper for a few additional comments.

<sup>6</sup>It should be pointed out that nouns are like verbs in that a high tone in a noun induces doubling onto the following tone-bearing unit. The proper analysis of a noun such as mašámbára is that there is a primary high on the syllable ...ša... and this high has doubled onto the syllable ...mba... Thus in the focused form of this noun, the high on ...ša... is lowered. This lowering precedes HIGH DOUBLING, thus once the primary high is removed from the noun, no double of that high can appear.

<sup>7</sup> In (144) the verbs are followed by items that are referred to in Bantu studies as ideophones. Ideophones are identified in our citations by an exclamation mark after them. They have tonal characteristics that are quite distinct from the tonal characteristics of other word categories. In some of the examples, the ideophone is entirely low-toned. They should not be confused with focused nouns (which may become low-toned through the loss of their first--and possibly only--high tone). All nouns in Makua have at least one primary high tone associated with them at the underlying level.

<sup>8</sup> One detail of pronunciation has been omitted in (148). In the left-hand derivation, we have ended up with two vowel morae at the juncture between the verb and the noun--but the correct pronunciation is with just a single vowel mora. In general, across word boundaries, two vowel morae are reduced to one. This fails to take place just in case there are high tones on both morae. Since we have not considered segmental processes across word boundaries in this study, this matter has not been gone into in the text.

<sup>9</sup> There may be a problem, though. In ki-no-ly-ā mēele, one of the two preceding low tones is the subject prefix kī-. A third person subject that is a child would have a  $\emptyset$  form in the SP slot. We do not have any examples in our data collection, but it seems very likely that if the subject prefix is  $\emptyset$  we will still fail to get retraction--that is, we would expect the form no-ly-ā mēele, even though just a single low-toned vowel precedes. But since the facts are not known, we cannot pursue this issue here.

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Vol. 11, No. 2  
Fall 1981

## DIMENSIONS OF SOUTH ASIAN LINGUISTICS

D.N.S. BHAT	<i>Physical identification in Kannda</i>	1
HANS HENRICH HOCK	<i>Sanskrit causative syntax: a diachronic study</i>	9
YAMUNA KACHRU	<i>On the syntax, semantics, and pragmatics of the conjunctive participle in Hindi-Urdu</i>	35
SURESH KUMAR	<i>Discourse structure in a Hindi short story</i>	51
K.P. MOHANAN	<i>Pronouns in Malayalam</i>	67
RAJESHWARI PANDHARIPANDE	<i>Interface of lexicon and grammar: some problems in Hindi grammar</i>	77
K.G. VIJAYKRISHNAN	<i>The syllable in phonological theory: arguments from Tamil</i>	101
WILLIAM D. WALLACE	<i>Object-marking in the history of Nepali: a case of syntactic diffusion</i>	107
TEJ K. BHATIA	<i>Transplanted South Asian languages: an overview</i>	129
TEJ K. BHATIA	<i>Trinidad Hindi: three generations of a transplanted variety</i>	135
NICOLE DOMINGUE	<i>Internal change in a transplanted language</i>	151
RAJESHWARI PANDHARIPANDE	<i>Transitivity in Hindi</i>	161
YAMUNA KACHRU	<i>Transitivity and volitionality in Hindi-Urdu</i>	181
TEJ K. BHATIA	<i>The treatment of transitivity in the Hindi grammatical tradition</i>	195
NARINDAR K. AGGARWAL	<i>Reference material in Hindi: state of the art</i>	209



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**STUDIES IN THE LINGUISTIC SCIENCES**

**DIMENSIONS OF SOUTH ASIAN LINGUISTICS**

Edited by  
**Yamuna Kachru**

**VOLUME 11, NUMBER 2**  
**FALL, 1981**

DEPARTMENT OF LINGUISTICS, UNIVERSITY OF ILLINOIS  
URBANA, ILLINOIS 61801



T A B L E O F C O N T E N T S

<i>PREFACE</i> . . . . .	<i>i</i>
D.N.S. Bhat: Physical identification in Kanada . . . . .	1
Hans Henrich Hock: Sanskrit causative syntax: a diachronic study . . . . .	9
Yamuna Kachru: On the syntax, semantics, and pragmatics of the conjunctive participle in Hindi-Urdu . . . . .	35
Suresh Kumar: Discourse structure in a Hindi short story . . . . .	51
K.P. Mohanan: Pronouns in Malayalam . . . . .	67
Rajeshwari Pandharipande: Interface of lexicon and grammar: some problems in Hindi grammar . . . . .	77
K.G. Vijaykrishnan: The syllable in phonological theory: arguments from Tamil . . . . .	101
William D. Wallace: Object-marking in the history of Nepali: a case of syntactic diffusion . . . . .	107
 <i>Supplement 1: Transplanted South Asian languages</i>	
Tej K. Bhatia: Transplanted South Asian languages: an overview	129
Tej K. Bhatia: Trinidad Hindi: three generations of a transplanted variety . . . . .	135
Nicole Domingue: Internal change in a transplanted language . . . . .	151
 <i>Supplement 2: Transitivity in Hindi</i>	
Rajeshwari Pandharipande: Transitivity in Hindi . . . . .	161
Yamuna Kachru: Transitivity and volitionality in Hindi-Urdu . . . . .	181
Tej K. Bhatia: The treatment of transitivity in the Hindi grammatical tradition . . . . .	195
Narindar K. Aggarwal: Reference material in Hindi: state of the art . . . . .	209



## PREFACE

This special issue on South Asian Linguistics continues the tradition of the *Studies in Linguistic Sciences* of publishing the on-going research on South Asian languages. The first such issue was *SLS* 1:2 on "Papers on Hindi Syntax" edited by Yamuna Kachru. It was followed by another special issue in 1973 (3:2) edited by Braj B. Kachru. In addition to these special volumes, papers on South Asian languages were included in several "general issues" of *SLS*, too. This issue, however, is with a difference. First, for the first time we have included specially invited papers from scholars other than those from the University of Illinois. There are thus three papers from India, one from Canada, and three from other U.S. institutions. The University of Illinois contribution to this volume is less than fifty percent. This 'casting a wide net' is consistent with the new policy of the *SLS*. Second, this issue includes two supplements: one on *Transitivity in Hindi* and the other on *Transplanted South Asian Languages*. Third, a number of papers included here were originally presented at the Third South Asian Languages Analysis Roundtable hosted by the Program in Linguistics, State University of New York at Stonybrook, New York, in 1981. The revised versions of these were specially selected by the editorial board for this issue of *SLS*. We are grateful to Professors S. N. Sridhar and Mark Aronoff of SUNY, Stonybrook for their permission, cooperation and help in this matter, and for organizing a very stimulating Roundtable with literally a 'shoe-string' budget.

A volume of this type is always a cooperative attempt. This could not have been possible without the support of an active research group at our University and their comments, criticisms, and suggestions on the papers included in this issue. I am grateful to Josephine Wilcock, Fannie Lambert, and Tamara Valentine for their contribution in preparation of the press copy of this volume.

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Fall 1981



PHYSICAL IDENTIFICATION IN KANNADA

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In recent linguistic literature, a great deal of attention has been paid to the problem of reference. A major distinction, however, has been overlooked. Noun phrases can be distinguished not only on the basis of referential identifiability of individuals or objects being referred to, but also on the basis of their physical identifiability. This paper discusses the notion physical identification and presents data from Kannada to show how this notion is crucial for an adequate description of a set of wh-word constructions in Kannada.

1. Introduction

Linguists have generally failed to notice that natural languages distinguish between noun phrases not only on the basis of the referential identifiability of objects or individuals that are being referred to (the so-called definite-indefinite distinction), but also on the basis of their physical identifiability--i.e., on the basis of the ability of the speaker to physically identify the object or individual that he is referring to. This latter semantic feature is very relevant in contexts such as that of the interrogative in which the speaker confesses his inability to physically (but not referentially) identify an object, or of the imperative in which the speaker is expected to necessarily provide a physical identification--if at all he is to make a specific (identifying) use of a given referring expression, and so on.

The two distinctions differ from one another on two distinct parameters. First, the person who is to be able or unable to establish an identification is the addressee (as presumed by the speaker) in the former case and the speaker himself in the latter case; and second, as pointed out above, the identification in question is referential (on the part of the speaker) in the former case and physical (on the part of the speaker) in the latter case.

2.0 The notion 'physical identification'

A speaker can referentially identify any object or entity that he can think of, and hence the question as to whether he would be in a position to referentially identify an object that he is referring to or not simply does not arise, whereas there would be innumerable instances in which he would not consider himself to be capable of physically identifying an object or entity that he is referring to.

Consider, for example, the use of a wh-word in an interrogative sentence. Generally, such a word indicates that the speaker considers himself to be incapable of physically identifying the object that he is referring to; he is in fact requesting his addressee, through such a sentence, to provide sufficient information for him so that he can establish a physical identity of that object.

This point can be exemplified with the help of the following sentence:

(1a) Where did you buy that shirt?

In using (1a), the speaker presupposes that the addressee had bought that shirt somewhere, but the exact location of that event (i.e., the shop in which the addressee had bought that shirt) is not apparently known to the speaker; hence he is trying to obtain that information from the addressee through (1a).

Notice, however, that the identification that needs to be established here is physical and not referential, and the person who needs additional information for doing so is the speaker and not the addressee. It is therefore incorrect to regard the use of wh-words as involving indefiniteness, as, I think, some linguists tend to do; one can easily paraphrase a sentence like (1a) into a sentence in which the location under consideration is referred to by a definite noun phrase as shown below:

(1b) Which is the place that you bought this shirt from?

Notice further that (1a) can be followed by another sentence (1c) in which the location is referred to by a definite noun phrase, and is free of any interrogation:

(1c) Did you buy those trousers also in the same place?

The possibility of using a definite expression the same place in (1c), and of uttering that sentence immediately after uttering (1a) in which a wh-word occurs instead, even before obtaining a reply to this latter sentence, indicates clearly, I believe, that a wh-word as such does not indicate indefiniteness (i.e., inability of the addressee to referentially identify an object), but rather the inability of the speaker to physically identify the object that he is referring to. Notice further that even though the speaker has uttered (1c) immediately after (1a), where the wh-word has been replaced by a definite noun phrase, he would still be expecting his addressee to provide an answer to (1a) as well; that is, the enquiry resulting from his use of the wh-word is unaffected by his substitution of that word by a definite noun phrase in a following sentence (1c) and hence, it cannot be something which lacks "definiteness."

### 3.0 The Kannada data

A wh-word can be used in other types of sentences also (i.e., in sentences other than the interrogatives) in order to indicate that the speaker is unable to physically identify the object or individual that he is referring to. It would be interesting in this connection to examine a complex system of wh-word constructions occurring in Kannada, showing a number of interesting constraints on usage, all of which can be explained on the basis of the above claim that the use of a wh-word implies the inability of the speaker to physically identify the referent.

I wish to examine here five distinct usages of the wh-word of this nature in Kannada, namely (i) with the alternative suffix o:, (ii) with the additive suffix u:, (iii) with the conditional form of the verb a:gu 'to become' followed by the additive suffix u:, (iv) with the emphatic suffix ei:, and (v) in exclamatory sentences. It can be claimed, I believe, that in all these constructions, as in the case of interrogative sentences



discussed above, the use of a wh-word implies that the speaker is unable to physically identify the object or entity that he is referring to by means of the expression under consideration.

### 3.1 The alternative suffix -o:

First, consider the use of the wh-word with the alternative suffix o: in an indefinite noun phrase contrasted with its absence in the same:

(2a) ra:muvige ondu pustaka be:ka:gide  
 Ramu-to one book want-having-is  
 Ramu wants a book.

(2b) ra:muvige ya:vudo: ondu pustaka be:ka:gide  
 Ramu-to which-or one book want-having-is  
 Ramu wants a book (i.e. an unknown book).

(2a) is ambiguous in that the indefinite noun phrase ondu pustaka 'a book' can have either a specific or a nonspecific use. In the former case, the speaker has a particular book in mind (which, he thinks, Ramu wants to have) but which he (the speaker) is not actually indicating to his addressee; whereas in the latter case the speaker has no particular book in mind (and apparently Ramu also does not, as far as the knowledge or belief of the speaker is concerned).

This ambiguity of (2a) is absent in (2b) because of the use of the wh-word ya:vudo: in that noun phrase. It has only a specific use and not a nonspecific use. Also, there is an additional meaning involved in (2b) in that the use of the wh-word indicates further that the speaker himself does not know the physical identity of the book which is desired by Ramu.

It is only the physical identity of the object which is unknown to the speaker and not its referential identity in the above usage; this can be made clear by the fact that (2b) can be followed by (2c) in which the noun phrase under consideration has been replaced by the pronoun adu 'it'.

(2c) adu sikkida ku:ɖle a:ta uɖupige ho:gutta:ne  
 it got-when soon he Udupi-to go-will  
 He will go to Udupi as soon as he gets it.

The examination of the remaining wh-word constructions would make it clear that the disambiguation of the specific-nonspecific distinction results from the use of the alternative suffix o: after the wh-word, whereas the addition of the new meaning, namely that the speaker has no knowledge of the physical identity of the object under consideration results from the use of the wh-word itself.

### 3.2 The additive suffix -u:

The disambiguation of the specific-nonspecific distinction can be effected by using the additive suffix u: rather than the alternative suffix o: after the wh-word. However, the former cannot be used in the above sentence (2a), which is a nondurative, indicative one, for reasons to be discussed a little later (see section 4.0). I will illustrate the possibility of this disambiguation with the help of the following negative sentences:

- (3a) ninne ra:tri a:ta obba vyaktiyannu kaṇḍiralilla  
yesterday night he one person (acc) seen-not  
He had not seen a person yesterday night
- (3b) ninne ra:tri a:ta ya:ranno: kaṇḍiralilla  
yesterday night he who (acc)-or seen-not  
He had not seen someone (unknown person) yesterday night.
- (3c) ninne ra:tri a:ta ya:rannu: kaṇḍiralilla  
yesterday night he who (acc)-and seen-not  
He had not seen anyone yesterday night.

(3a) is ambiguous in that the noun phrase obba vyaktiyannu 'a person' can have a specific use or a nonspecific use. In (3b) the wh-word that has replaced it, namely ya:ranno: 'someone' can only be specific; whereas in (3c) the wh-word ya:rannu: 'anyone' which occurs in place of it, can only be nonspecific. Further, both these latter noun phrases clearly indicate that their referents are physically unknown or unidentifiable for the speaker.

Thus the difference between the uses of the alternative o: and the additive u: after a wh-word is that the former effects disambiguation by allowing the noun phrase to have a specific use, whereas the latter does so by allowing it to have a nonspecific use.

There is an additional meaning difference between the above two wh-word constructions: the one containing the alternative suffix o: has a restricted reference whereas the one containing the additive suffix u: has an unrestricted reference.

Since the former can only have a specific use, the fact that its reference is restricted may appear to be rather automatic. But this is not true of the latter construction. Because, one can think of it as having either a restricted reference or a non-restricted reference.

### 3.3 The conditional a:dare

In Kannada, the use of the additive suffix u: directly after the wh-word provides the unrestricted reference, whereas the use of the conditional form a:dare (of the verb a:gu 'to become') in between the two gives the restricted reference. Example:

- (4a) ra:mu elligu: ho:da:nu  
Ramu where-and go-may  
Ramu may go anywhere.
- (4b) ra:mu elliga:daru: ho:da:nu  
Ramu where-become-if-and go-may  
Ramu may go to some (unknown) place.

In (4a), the wh-word elligu: has an unrestricted reference regarding the place to which Ramu may go, whereas in (4b) the wh-word elliga:daru: has a restricted reference. That is, according to (4b), the place to which Ramu would go, even though unknown, is a restricted (but nonspecific) one.

### 3.4 The emphatic suffix -e:

The wh-word can be used along with the emphatic suffix e: in order to indicate that the choice of a specific referent is being left to the addressee; since in such a situation the speaker cannot consider himself to be capable of physically identifying the referent (the choice is yet to be made) his use of the wh-word can rightly be claimed as indicating the absence of such an ability. Examples:

- (6) ya:re: ke:ɻali na:nu koɻuvudilla  
 who-emph. ask-may I give-will-not  
 Whoever may ask, I will not give.
- (7) ya:vudanne: ke:ɻu koɻutte:ne  
 which-emph. ask give-will  
 Whichever you ask, I will give it to you.
- (8) eṣṭe: kaṣṭava:daru: ma:ɻutte:ne  
 how-much-emph. difficulty-become-if do-will  
 However difficult it may be, I will do it.

It is interesting that English also use a wh-word construction in situations of the above nature.

### 3.5 The exclamatory sentence

The use of wh-words in exclamatory sentences can be exemplified with the help of the following sentences:

- (9) avanu eṣṭu be:ga bandidda:ne  
 He how-much quickly come-has  
 How quickly he has come!
- (10) avaɻadu entha: svara  
 her-it what-type-of voice  
 What a voice she has!
- (11) e:nu maɻe  
 what rain  
 What a rain!

Notice that only three wh-words eṣṭu 'how much', e:nu 'what' and entha: (or entaha) 'of what type' can occur in exclamatory sentences in Kannada. It can be claimed, I think, that in these usages also, the speaker is indicating his inability or unwillingness to physically identify (or express) the exact quality or quantity that has given rise to his surprise.

### 4.0 Constraints on -o:, -u: and a:dare constructions

I would now like to discuss certain interesting syntactic constraints or restrictions in the use of three of the wh-word constructions discussed above, namely, the alternative, additive and conditional.

First, the alternative form is not used in an imperative sentence, whereas the remaining two forms are. Consider (12a)-(12c):

- (12a) \*elligo: ho:gu  
 where-or go  
 \*Go to some (unknown specific) place!
- (12b) elligu: ho:gu  
 where-and go  
 Go to any (unknown nonspecific) place!
- (12c) elliga:daru: ho:gu  
 where-become-if-and go  
 Go to some (unknown nonspecific) place!

The constraint is evidently due to the occurrence of specific reference in (12a). If the speaker is asking his addressee to go to a particular place, he will have to give him the "physical" identity of that place as well; because the addressee will not otherwise be in a position to carry out the order. In (12a) even though the location to be reached is specific, it is indicated to be physically unidentifiable or unknown to the speaker, as a result of the use of the wh-word. Hence, (12a) is unacceptable.

Since no specific location has been indicated in (12b) or (12c), the addressee is free to choose his own location in either of them and carry out the order. Hence both these sentences are acceptable.

It is interesting to note in this connection that indefinite noun phrases occurring in imperative sentences have only a nonspecific use. Consider, for example, the following sentences:

- (13a) John wants to buy a book.
- (13b) Give him a book!

The sentence (13a) is ambiguous in that the noun phrase a book occurring in it may either refer to a particular book, or to no book in particular; whereas (13b) is not ambiguous since the speaker cannot have any particular book in mind while uttering (13b).

The second constraint that I wish to point out here is that in a yes-no question or in a protasis, only the conditional form of the wh-word can be used but not the other two. Examples:

- (14a) \*ra:mu elligo: ho:dano:  
 Ramu where-or go-he-did  
 \*Did Ramu go to some unknow specific place?
- (14b) \*ra:mu elligu: ho:dano:  
 Ramu where-and go-he-did  
 \*Did Ramu go to any unknow nonspecific place?
- (14c) ra:mu elliga:daru: ho:dano:  
 Ramu where-become-if-and go-he-did  
 Did Ramu go to some unknown nonspecific place?

The sentence (14a) is unacceptable because the speaker makes a specific reference to a location which is physically unidentifiable for him and hence he cannot expect his addressee to say whether Ramu has gone to that place or not; (14b) is unacceptable because even though the location is nonspecific, it is unrestricted and hence, a yes-no question about it cannot be answered; the absence of a specific reference and the presence of a restriction regarding the location in (14c) makes it possible to answer the question contained in it, and hence (14c) is acceptable.

The following examples indicate that a similar set of constraints affects the occurrence of these wh-forms in the protasis of conditional sentences as well:

- (15a) \*ya:ro: bandare he:lutte:ne  
 who-or comes-if tell-will-I  
 \*I will tell you it some unknown specific person comes.
- (15b) \*ya:ru: bandare he:lutte:ne  
 who-and comes-if tell-will-I  
 \*I will tell you if any unknown nonspecific person comes.
- (15c) ya:ra:daru: bandare he:lutte:ne  
 who-become-if-and comes-if tell-will-I  
 I will tell you if some unknown nonspecific person comes.

The reason for the unacceptability of (15a) and (15b) and for the acceptability of (15c) are the same as the ones given above.

The third constraint that I wish to point out here is that only the alternative form can occur in nondurative indicative sentences but not the additive or the conditional.

- (16a) ya:ro: bandaru  
 who-or came  
 Some unknown specific person came.
- (16b) \*ya:ru: bandaru  
 who-and came  
 \*Any unknown nonspecific person came.
- (16c) \*ya:ra:daru: bandaru  
 who-become-if-and came  
 \*Some unknown nonspecific person came.

This constraint, I think, is due to the fact that, in Kannada, a generic sentence (or a habitual one) must have a durative predicate in the indicative mood. The additive and the conditional forms can only have a nonspecific meaning, which means that the sentences containing them can only be generic. Hence they cannot occur in nondurative indicative sentences.

The fourth constraint that may be noted here is that the conditional form cannot be used in a negative sentence, whereas the other two forms can. Examples:

- (17a) ra:muvice e:no: sigalilla  
 Ramu-to what-or got-not  
 Ramu did not get some unknown specific thing.
- (17c) \*ra:muvice e:na:daru: sigalilla  
 Ramu-to what-become-if-and got-not  
 \*Ramu did not get some unknown nonspecific thing.

One can either negate an event with reference to a specific object or with reference to all the objects (of a particular type). It would not be possible, however, to negate an event with reference to an object to which a restricted reference has been made, without at the same time making a specific reference to it. This, I think, is the reason why (17c) is unacceptable.

The fifth constraint to be noted here is that a numeral can be used after an alternative form or after a conditional form, but not after an additive form. Examples:

- (18a) ya:ro: mu:varu baralilla  
 who-or three-persons came-not  
 Three unknown specific persons had not come.
- (18b) \*ya:ru: mu:varu baralilla  
 who-and three-persons came-not  
 \*Three unknown nonspecific nonrestricted persons had not come.
- (18c) ya:ra:daru: mu:varu barali  
 who- become-if-and three-persons came-let  
 Let three unknown nonspecific restricted persons come.

I have used an imperative (concessive) form of the predicate in (18c) because, as shown by the fourth constraint given above, the conditional form cannot occur in a negative sentence.

The reason for the unacceptability of (18b) is that the numeral restricts the number of persons that are being referred to by a noun phrase, and hence it would conflict with the unrestricted meaning of the simple additive form of the wh-word. Hence, in order to use a numeral with it, one will have to add the conditional form of the verb a:gu 'to become' to it, which has the effect of restricting the reference.

## 5.0 Conclusion

The above discussion suggests that the notion 'physical identification' is crucial not only for giving an adequate account of the five constructions discussed in section 3.0, but also for explaining the constraints described in section 4.0. It would be interesting to investigate the relevance of this notion for other languages as well. Note that the translation equivalents for the Kannada examples suggest that this notion might be equally useful to account for certain distinctions in English.

SANSKRIT CAUSATIVE SYNTAX: A DIACHRONIC STUDY<sup>1, 2</sup>

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Interest in the origin and development of the Sanskrit causative has recently been revived by Cardona (1978). This paper attempts to supplement and correct Cardona's findings. Specifically, it shows that the class of verbs permitting causative formation in the earliest, Rig-Vedic Sanskrit consists of intransitives, semi-transitive verbs of motion, and 'affected-agent' transitives. Causees are marked accusative and are promotable to subjecthood in the passive. Later Samhita-Vedic shows an expansion of this class, so as to include other transitives. Causee marking remains accusative. The crucial period of change is that of the Brahmanas, where instrumental-marked causees begin to appear. The starting point for this innovation seems to lie in (the re-interpretation of) animate instrumentals of means or instrument. It is shown how this transitional stage develops into the highly divergent systems of Pāṇini on one hand (with causee marking sensitive to lexically determined verb classes), and the Classical tradition on the other (with causee marking sensitive to pragmatic factors). In the latter tradition, it is observed that not only are accusative-marked causees promotable to subjecthood, they are promoted preferentially, over against accusative objects. Moreover, even instrumental-marked causees tend to hold a position 'higher' than such accusative objects.

1. INTRODUCTORY

1.1. A very important recent paper by Cardona (1978) has revived interest in the origin and development of the Sanskrit causative. As Cardona correctly observed, even in the earliest Sanskrit attestations, those of the Rig-Veda, the causative marked by the verbal suffix -aya- is not limited to intransitives, but is found also with certain transitives. Moreover, comparative evidence shows this pattern to be inherited from Proto-Indo-Iranian and even from Proto-Indo-European. (Ibid.35-7, n. 25.) As a consequence, hypotheses like those of Jamison (1976) and Haudry (1977:381-2, 385, and passim) which consider the causative of transitives to be a secondary development within Sanskrit can no longer be accepted.

1.2. At the same time, however, Cardona notes that it is only a certain subset of the transitives which is open to this causative construction in early Vedic. This subset he characterizes as consisting of the following (9-12, 19-20, 38):

- (A) Verbs of movement, such as gam- 'go';
- (B) Verbs of perception and knowing, such as īkṣ- 'see', śru- 'hear, listen', cit- 'perceive, know';
- (C) Verbs of consuming (eating, drinking), such as pā- 'drink';
- (D) Verbs of saying, such as vac- 'speak'.

In addition, causatives can of course be made from intransitives. In many cases, these causatives function as simple transitives, as in vardhate 'grows (itr.)' : vardhayati 'grows (tr.)', makes grow'. In others, they compete with simple, unmarked transitives, as in vartate 'turns (itr.)' : vartati/vartayati 'turns (tr.)', makes turn'. But also more clearly causative values can be found, as in sīdati 'sits down' : sādayati 'makes sit down'. Finally, Cardona notes a special group of causatives corresponding to intransitive/passives, such as śṛṇve 'is heard/famous' : śrāvayati 'makes to be heard/famous' or mṛje 'is cleansed/cleans himself' / mṛjyate 'is cleansed' : mārṣti/mārjayati 'cleanses' (12-16, 20, 38).

Syntactically, all of these causatives are characterized by the fact that the subject of the underlying non-causative (the causee) is marked as accusative. The case of other constituents remains unchanged. As a consequence, also the case of the underlying object or goal (if any) remains: accusative or genitive for classes (B) and (C), accusative or dative for class (D), and accusative/dative/locative for class (A) (ibid.9-13).

In the later language as described by Pāṇini, a different situation obtains. While causatives of intransitives and class (A)-(D) transitives still show the accusative of the causee, those of the other transitives (hereafter referred to as (F)) require the instrumental, except for hr- 'take, carry' and kr- 'do' which offer an option between instrumental and accusative.

1.3. For this later development of a new category of class (F) causatives, Cardona considers important the following early Vedic correlations between base verb or passive and causative (19-20, 26-7, 38):

	Base verb/pass.	Causative
(i) itr.	<u>sīdati</u> 'sits'	<u>sādayati</u>
(ii) (A)-(D) itr./pass.	<u>śṛṇve</u> 'is heard'	<u>śrāvayati</u>
(iii) (A)-(D) act.	<u>śṛṇoti</u> 'hears'	<u>śrāvayati</u>
(iv) (F) itr./pass.	<u>mṛje/mṛjyate</u> 'is cleansed'	( <u>mārjayati</u> = trans.act.)
(v) (F) act.	<u>mārṣti</u> 'cleans'	-----

Of these, the relationship between mṛje/mṛjyate and the active mārṣti / "caus." mārjayati is the most important: While early on, mārjayati is simply equivalent to transitive/active mārṣti, the analogy of class (A)-(D) causatives (like śrāvayati) made it possible to shift the function of forms like mārjayati to that of a true causative. For a while, then, the old and new values coexisted and competed. Eventually, however, these formations either became true causatives or were lexicalized as regular transitives. (Thus, mārjayati eventually became a simple transitive.)

Syntactically, in this development the influence of type (ii) above, i.e. of the equally intransitive/passive base verbs of class (A)-(D), was most important in Cardona's view. For in combination with the fact that sets like mṛje/mṛjyate became exclusively passive, they led to the reinterpretation of the type mārjayati as causatives built on the passive. In this latter category, however, the underlying subject was realized in the instrumental case, the underlying object as nominative. Given the rule mentioned earlier, that in the causative the nominative of the base structure is converted into an



accusative, while other case markings remain unchanged, this would result in structures with instrumental of the causee and accusative of the underlying object:<sup>3</sup>

	Underlying subject	Underlying object
act.:	Nom.	Acc.
pass.:	Instr.	Nom.
caus. I:	Instr.	Acc.

There was, however, another possible option, namely to extend to the new causatives the pattern of type (iii) above:

act.:	Nom.	Acc.
caus. II:	Acc.	Acc.

For a while, these two patterns were in competition with each other. Eventually, however, the caus.I pattern became generalized for all type (F) verbs, with only hr- and kr- optionally retaining caus.II (ibid.27).

Finally, Cardona notes a certain 'encroachment' of the caus.I pattern on (A)-(D) causatives, both in certain Vedic examples and in statements by later grammarians who propose certain exceptions to Pāṇini's rules for (A)-(D) verbs (28-9). 'However, so far as I know, this construction [with caus.I for (A)-(D) verbs] had not been fully generalized by Pāṇini's time. Indeed, verbs of the semantic groups [(A)-(D)] which had construction [caus. II] in early Indo-Aryan continued to enter into a causative construction different from that of the other transitive verbs ...' (29).<sup>4</sup>

1.4. The purpose of this paper is to supplement Cardona's observations outlined in 1.2 above and to propose an explanation for the later developments which is different from Cardona's views sketched in 1.3 above. It should be noted, however, that these modifications do not affect Cardona's view that the causative in -aya- is inherited not only for intransitives, but also for a subclass of the transitives. This view is, I believe, correct beyond a reasonable doubt.

Specifically, in section 2 of this paper I will show that at the earliest, Rig-Vedic stage of Sanskrit, causatives can be made not only from intransitives, the quasi-transitives of class (A),<sup>5</sup> and what following Masica (1975:45-7, 57, and esp. 63) we may call the ingestive transitives of classes (B)-(D), but from yet another set of transitives--class (E). And what this class shares with the other (transitive) classes is that it consists of verbs with affected agents:<sup>6</sup> The verbal action of such transitives affects not only the object, but also the subject--at least more saliently so than it does for other, class (E) transitives. It is true, the distinction in question is not absolute, but gradient; and the dividing line is not always easy to draw. But this does not take away from the fact that the distinction can be important in syntax. Moreover, in the specific case of the Sanskrit causatives, this non-absolute, gradient nature of the notion 'affected agent' can be seen to have important consequences.

Section 3 examines the evidence of the Atharva-Veda and other post-Rig-Vedic mantra collections. At least one quite different, class (F) transitive

can be observed to have been added to the list of verbs which can form causatives. In their syntactic behavior, however, the causatives do not yet show any meaningful change.

The change comes in the next stage, that of Vedic prose. (Section 4.) It is at this stage that causees begin to appear in the instrumental case. Moreover, already at this point they can be used both with affected-agent verbs and with others. Finally, there seem to be certain semantic conditions which favor the appearance of such instrumental causees, and these conditions make it possible to relate these new structures to a pattern found as early as the Rig-Veda, namely that of instrumental-marked animate 'means' or 'instruments'.

Section 5 shows that the situation in Classical Sanskrit essentially follows the same lines as that of Vedic prose, suggesting an unbroken tradition of usage. Also the question of passivization of causatives will be examined.

Section 6 observes that Pāṇini's system is quite different from the Vedic prose-Classical Sanskrit tradition and from the earlier (Rig-)Vedic situation. It is suggested that this system derives from the system of Vedic prose, through a set of reinterpretations and generalizations divergent from those made in the Vedic prose-Classical tradition.<sup>7</sup>

## 2. CAUSATIVES IN THE RIG-VEDA<sup>8</sup>

2.1. At the earliest attested stage of Sanskrit, the following verbal roots are attested with (genuine) causatives:

(A) Quasi-transitive verbs of motion: r- 'go, reach', gam- 'go', dru- 'run', ruh- 'ascend', viś- 'enter'.

(B) Verbs of perception and knowing: ikṣ- 'see', cit- 'notice, see; understand',<sup>9</sup> vid- 'know' (but cf. below), śru- 'hear, listen; be heard/famous'.

(C) Verbs of consuming: aś- 'eat' (only in participle, cf. below), dhā- 'nurse, suckle', pā- 'drink', bhaj- 'partake of, consume'.

(D) Verbs of speaking: śams- 'recite, speak' (only with preverb ā).

(E) Other affected-agent verbs: vas- 'wear', spṛś- 'touch', yudh- 'fight', śrad-dhā- 'believe' (without causee).<sup>10</sup>

The inclusion of the last verb perhaps requires some comment. Taken by itself, dhā- 'put' hardly would seem to belong into class (E). However, it seems that the compound of śrad 'belief' and dhā- 'put' has become lexicalized in the meaning 'believe': With one exception, śrad- only occurs in combination with dhā-. Moreover, śrad-dhā- can take an accusative or dative complement of its own; i.e. it behaves like a transitive verb in its own right.

(F) Other transitives: None.

2.2. Syntactically, the behavior of these verbs is essentially that described by Cardona: The causee (if attested) appears in the accusative, other case relations remain unchanged. The following examples may suffice

as illustrations. (Here as elsewhere, causees are characterized by double underlining. A = accusative, I = instrumental, N = nominative, obl. = oblique.)

- (1) tasmin ā veśaya girah (1.176.2)  
 Loc.      caus. pl.A  
 'make the praises enter him'
- (2) sam yat janān ... śūrah īkṣayat (1.132.5)  
 pl.A                      caus.  
 'when the hero makes the people look [at him]'
- (3) devān ... pāyaya haviḥ (2.37.6)  
 pl.A                      caus. sg.A  
 'make the gods drink the oblation'
- (4) ā tu nah indra saṃsaya (1.29.1)  
 obl.                      caus.  
 'O Indra, make us speak forth = conjure up'

(Note, however, that nah, being a clitic oblique form, is not unambiguously marked as accusative, or as any other case, for that matter.)

- (5) vastreṇa iva vāsaya manmanā śucim (1.140.1)  
 sg.I                      caus. sg.I      sg.A  
 'make the pure one wear [clothe him] (by) a prayer as if (by) a garment'

2.3. There are however certain verbs which do not seem to follow the regular case marking pattern.

On one hand, there are verbs which show apparent deviations from the accusative marking of the causee:

- (6) acetayat dhiyaḥ imāḥ jaritre (3.34.5)  
 caus.                      pl.A                      sg.Dat.  
 'he made the thoughts known to/by the singer'
- (7) yajñam devebhyaḥ prativedayan (1.162.4)  
 sg.A      pl.Dat.                      caus.  
 'making the sacrifice known to the gods'

Haudry (1977:384, 387-8) considers (6) above to show that the syntax of causatives is not yet settled in early Vedic. However, two other analyses are possible. According to one, the dative forms of (6) and (7) are not causees, but simply refer to the beneficiary of the verbal action. (This is a common, independently attested function of the dative.) The second analysis would see in these sentences forerunners of a pattern more clearly attested later, in which original causatives like (ni-/ā-/prati-)vedaya- 'make known' have been lexicalized as simple verbs of speaking and thus take the accusative or dative of the person informed. (Cf. also 3.3 below.) Given these alternatives, Haudry's claim cannot be considered cogent.

2.4. There are also some apparent difficulties with the marking of the underlying object. Thus in example (5) above, the putative underlying object manma 'prayer' / vastram 'garment' appears in the instrumental, not in the accusative normally found in the non-causative; cf. (8) below.

- (8) yuvam vastrāpi pīvasā vasāthe (1.152.1)  
 pl. A non-caus.  
 'you two are wearing garments of ghee'

Haudry (1977:384, 386) here likewise suggests that the syntax of causatives is not yet settled in the Rīg-Veda. Again, however, his explanation is not cogent. For we do find at least one non-causative example of vas- with the instrumental of its complement:

- (9) sam abhreṇa vasata parvatāsaḥ (5.85.4)  
 sg. I non-caus.  
 'the mountains wear the cloud'

Because of the limited nature of the non-causative evidence, it is difficult to determine the conditions for the selection of the instrumental, as well as whether this instrumental is in fact an object or has a different syntactic function. However, the evidence in 3.4 below suggests that verbs of clothing may regularly mark their complement either as instrumental or as accusative. Moreover, yudh- 'fight' likewise takes both instrumental and accusative complements. Finally, as noted earlier, all the verbs of classes (A)-(D), as well as śrad-dhā-, offer a choice between different complement cases. Perhaps, then, this choice of marking is a regular feature of affected-agent verbs.

Also sprś- 'touch', which in the non-causative (or 'simplex') takes locative or accusative complement marking, has an example of instrumental object (or causee ?), cf. (10). However, given that one of the functions of the instrumental is to serve as the 'with'-case, it is easy to see how this situation might have come about: With a verb of this sort, the causation of touching can be visualized as consisting not in making A touch B, but A and B touching each other, or A being in touch with B. Moreover, if the situation is perceived in this manner, it will become difficult to distinguish between causee and object. It is, I believe, these special semantic conditions which account for (10). In fact, as will be seen in 4.5 below, these special semantic conditions lead to the appearance of yet other patterns, including that of instrumental complements for the non-causative. Given these circumstances, it seems unnecessary to see in these instrumentals early instances of instrumental causees. (Note that in two other attestations, RV 6.15.18 and 6.49.12, the more 'grammatical' solution is found, with causee in the accusative and complement in its underlying case marking, which in both cases happens to be locative.)

- (10) varcasā sūryasya ... tanvam sparśayasva (10.112.3)  
 sg. I sg. A caus.  
 'let your body come in contact with the splendor of the sun'

2.4. There is yet another syntactic difficulty in the case of vas-: The simplex always has middle-voice verb inflection. As is well known, one of the functions of early Vedic middle voice inflection is to encode reflexivity. It is therefore possible to argue that expressions like abhreṇa vasata should be rendered 'they clothe themselves with the cloud', not as 'they wear the cloud'. The relationship between vaste 'clothes himself' and vāsayati 'clothes s.o. else' thus would be not one of simplex to causative but of reflexive/quasi-intransitive to non-reflexive/transitive, comparable to vartate 'turns himself = turns (itr.)' vs. vartati/vartayati 'turns s.o. else = turns (tr.)'. There is, however, one important difference between verbs like vartate and verbs like vaste: the former can be viewed as quasi-

intransitive, since except for the 'hidden' reflexive, the verb has no further arguments. In the case of vas-, however, the verb does have such an additional argument, namely the accusative/instrumental complement of the garment worn. That is, it is transitive to begin with. Finally, note that there is at least one verb comparable to vas-, namely the reflexive yajate 'sacrifices for himself' where there is syntactic evidence that the causative in -aya- is in fact different from the non-reflexive active simplex yajati 'sacrifices for s.o. else'; cf. 4.6.

2.5. There is evidence in the Rig-Veda which may be interpreted as showing that the accusative-marked causee of causative verbs has object properties, i.e. that from a synchronic point of view, the accusative is not just an arbitrary marker of the causee, but a genuine object marker.<sup>11</sup> This evidence consists in the passive(-like) participles āsīta- 'sated' and arpi-ta- 'made to reach'. These are formed from the causative stems āsaya- 'cause to eat' and arpayā- 'cause to reach', which in turn derive from ās- 'eat' and r- 'go, reach'. āsīta- is attested four times, arpi-ta- ten times. And in all of these fourteen attestations, the context makes it clear that they refer to promoted causees, not promoted objects; cf. e.g. (11) below.

- (11) adat pibat ūrjayamānam āsītam (10.37.11)  
'eating, drinking, becoming strong, sated'

2.6. The above findings, then, in general agree with Cardona's observations, except that the class of transitives making causatives at the Rig-Vedic stage is larger and includes also non-ingestive affected-agent verbs. This is important for two reasons: (a) It shows that there is no straight-line relationship between the pattern of this earliest stage of the language and the ingestive : non-ingestive distinction made by Pāṇini. (b) Since the notion 'affected agent'(AA) is a gradient one, it can readily be seen that and how the Rig-Vedic pattern can slowly begin to be extended to other verbs which less clearly belong to the AA class or which quite clearly are non-AA.

### 3. CAUSATIVES IN THE LATER MANTRA COLLECTIONS

3.1. The difference between the stage represented by the Atharva-Veda and other post-Rig-Vedic mantra collections on one hand and the Rig-Veda on the other to a large degree is a quantitative one. Although exact counts do not exist, it is my impression that the textual occurrence of causatives has increased. Moreover, there are a number of roots which now for the first time appear in causative constructions. (An incomplete list of these roots appears below.) Finally, and most importantly, causative attestations are found from one root (dā- 'give') which quite clearly belongs to the non-AA class.

- (A) car- 'move' (VS 23.21), yā- 'go' (VS 25.39), sṛp- 'crawl, move' (VS 33.6).  
 (B) drś- 'see' (AV 4.20.6), jñā- 'know' (TS 2.1.11.3).  
 (C) bhuj- 'enjoy, consume' (AV 19.50.6).  
 (D) (No new forms noted by me.)  
 (E) pari-dhā- 'put on, clothe' (AV 12.3.51, (19.24.1,) 19.46.4) (cf. below), jī- 'conquer, win' (VS 9.11, 12 = TS 1.7.8.1, 4 etc.).  
 (F) dā- 'give' (AV 3.20.8, VS 9.24, TS 1.7.10.1.-- These are

(quasi-)repetitions of a fixed formula.)

3.2. Syntactically, there is no significant change. The normal pattern for causee marking still is accusative, even for the new class (E) causative (cf. (12)) and for the (E) verb ji- 'conquer' (cf. (13)).

- (12) (a)ditsantam dāpayatu (AV 3.20.8)  
 sg.A (neg. caus.  
 participle)  
 'let him make/cause to give the one who is not about to give'
- (13) (i)ndram vājam jāpayata (VS 9.11 = TS 1.7.8.1)  
 sg.A caus.  
 'make Indra win the prize'

3.3. Here again the causative of vid- 'know' constitutes an exception, in taking dative marking of the "causee"; cf. (14). This suggests that the dative marking noted in the Rig-Veda (2.3 above) was not just an isolated aberration, but did in fact constitute an instance of the lexicalization of the original causative of vid- as a simple verb of speaking.

- (14) imāḥ tasmai prati pra vedaya (TS 3.1.4.1 (mantra))  
 pl.A sg.D caus.  
 'announce these to him'

3.4. In the case of pari-dhā- 'put on, clothe' (lit. 'put around'), we are, as in the case of RV śrad-dhā-, dealing with a lexicalized compound of dhā-. And although dhā- 'put' is hardly an AA verb, pari-dhā- when used reflexively is as comfortable in the AA class as RV śrad-dhā-.

Like the semantically close vas- 'wear', this verb shows the possibility of instrumental or accusative marking for the underlying object, both in the causative and in the simplex; cf. (15) for accusative and (16) for instrumental.

- (15) (a) pari dhatsva vāsaḥ (AV 19.24.4)  
 non-caus. sg.A  
 middle  
 'put on a garment'
- (b) (ā)tmānam pari dhāpayāthaḥ vāsaḥ (AV 12.3.51)  
 sg.A caus. sg.A  
 (reflexive)  
 'you two cause yourselves to put on a garment'
- (16) (a) tena enam ... pari ... dhattana (AV 19.24.1)  
 sg.I sg.A non-caus.  
 act.  
 'with that clothe this man'
- (b) indrasya tvā varmaṇā pari dhāpayāmaḥ (AV 19.46.4)  
 sg.A sg.I caus.  
 'with Indra's armour we cause you to clothe [yourself]'

There is, however, a syntactic difficulty similar to that which obtains for RV vas- (cf. 2.4 above). It might be argued that (15a) and (15b) are equivalent (except for the difference in number marking of the verb): In (15a) the reflexive is marked on the verb, in (15b) it has surfaced as ātmā-nam, making reflexive middle-voice marking on the verb unnecessary. Moreover,

it may be argued that the translational difference between causative and simplex is artificial, not only for (15a) vs. (15b), but also for (16a) vs. (16b). In fact, the existence of the active, non-middle voice type (16a), taking the same number of arguments as causative (?) (16b) may well be taken to decide the issue. Whatever the decision may be, however, the case for taking pari-dhāpaya- to be a causative formation is much less clear than that for vasaya-; for in the latter case there seem to be no attestations comparable to (16a) (or to (15b), for that matter).

3.5 The most important development of this stage of the language, then, consists in the fact that the causative construction has begun to be extended to non-AA verbs. And what is perhaps equally important is the fact that in these earliest examples of non-AA causatives, the case of the causee is the same as it had been for the AA verbs, namely accusative. This suggests that non-AA verbs acquired causative constructions by a relatively smooth process of extension of class membership, made possible by the gradient nature of the notion 'affected agent', and not by the rather abrupt reinterpretation and syntactic reorganization proposed by Cardona.

#### 4. CAUSATIVES IN VEDIC PROSE<sup>12</sup>

4.1. As in the preceding stage, so also here there seems to have been an increase both in frequency of causative occurrences and in the number of verbs entering into the causative construction. New additions to the list of verbs with attested causatives include the following.

- (A) kṣar- 'run, flow' (TS 6.3.10.2).  
 (B) khyā- 'see' (ŚB 1.3.1.26, etc.).  
 (C) ad- 'eat' (AB 4.27.6, SB 2.5.1.6), ghrā- 'smell' (TS 7.1.6.6, ŚB 4.5.8.5, etc.).  
 (D) vac- 'speak' (AB 8.6.9 etc.), vad- 'speak' (ŚB 1.8.3.20 etc.).  
 (E) śliṣ- 'stick to, adhere' (with locative or accusative complement) (AB 5.32.6);  
 ↑  
lih- 'lick' (ŚB 14.4.3.4);  
yaj- 'sacrifice for oneself' (AB 1.11.5 etc.etc.);  
ṣp- 'obtain, reach' (ŚB 2.3.3.16 etc.);  
rabh-, labh- 'obtain, take' (TS 2.6.2.5 etc.; TS 2.2.2.2 etc.);  
duh- 'milk' (ŚB 1.7.1.18 etc.; no causee);  
vid- 'find' (TS 2.2.8.2);  
grah- 'seize' (MS 2.5.6, TS 7.2.7.3, etc.);  
vah- 'convey' (AB 1.2.6 etc.);  
bhṛ- 'carry' (KS 23.8 (2x); no causee);  
hr̥- 'take, carry' (AB 7.12.4 etc.);  
kṛ- 'do, make' (AB 3.46.2);  
pac- 'cook' (ŚB 14.9.1.1; no causee);  
 ↓  
 (F) bandh- 'fetter, tie' (ŚB 13.5.4.4; no causee).

(Note that in the continuum from (E) to (F) some, not necessarily entirely successful attempt has been made to order roots in terms of their relative AA status.)

4.2. What is even more important, however, is that it is at this stage that instrumental-marked causees begin to appear. And what is equally important is that most of the new, non-AA causatives appear with accusative causees.





- khyā-(20) (a) eke yajamānam avakhyāpayanti (ŚB 1.3.1.26 etc.)  
 sg.Ā caus.  
 'some make the sacrificer look down'
- (b) enām somakrayanyā samkhyāpayati (SB 3.3.1.11 etc.; rare)  
 sg.I caus.  
 'he has the soma cow look at her'/'he has her exchange  
 looks with the soma cow' (?)
- śru- (21) (a) [śrāvayā it asya karpā (RV 4.29.3) (cf. also 4.5 below)  
 caus. pl.Ā  
 'make his ears listen/hear' ]
- (b) tam vai devaiḥ śrāvaya (ŚB 1.8.3.20)  
 pl.I caus.  
 'make him be heard by the gods'
- vad- (22) (a) etām atra vācam pratyudvādayanti (ŚB 1.1.4.11 etc.)  
 sg.Ā sg.Ā caus.  
 'they make this voice speak out'  
tanvas samavādyanta (KS 24.9)  
 pl.N caus.pass.  
 (promot.)  
 'the bodies were caused to converse'
- (b) samvādaya enam devaiḥ (ŚB 1.8.3.20)  
 caus. pl.I  
 'make the gods speak to him'/'make him converse with  
 the gods' (?)
- śliṣ-(23) (b) yathā śleṣmaṇā carmanyam ... samśleṣayet (AB 5.32.6)  
 sg. I caus.  
 'as if one were to make glue stick together leatherwork'/  
 'as if one were to make leatherwork stick together with  
 glue' (?)
- grah-(24) (a) osadhīḥ eva phalam grāhayati (KS 26.5)  
 pl.Ā caus.  
 'he causes the plants to take fruit'
- (b) varuṇa eva bhrātrvyam grāhayitvā brahmaṇā struṇte  
 sg.I caus. sg.I non-caus.  
 (TS 2.1.8.2, similarly KS 13.4)  
 'having caused Varuna to seize the enemy, he lays him  
 low with the sacrificial formula'  
tam varuṇa eva grāhayitvā viṣṇunā yajñena (TS 2.1.4.4)  
 sg.I caus. sg.I sg.I  
 'having caused Varuna to seize him, Viṣṇu [and] the  
 sacrifice [to seize him] '  
 (This, like (19b) is a highly formulaic expression, re-  
 curring frequently, with only the NP filling the causee  
 position varying.)
- ji- (25) (a) satyena eva enam ujjāpayati (KS 14.7)  
 sg.Ā caus.  
 'with truth he makes him win'
- (b) tayor āryeṇa varuṇe śaudram varṇam jyāpayanti (JB 2.404)  
 sg.I caus.



It is perhaps also striking that in many of the above constructions the putative instrumental causees are inanimate; cf. the second example under (18b); (19b), (26b); and especially (17b), a frequently attested formulaic expression whose instrumentals always are inanimate. Note also that in the formula of (24b) both animate and inanimate causees may appear, sometimes even side by side.<sup>13</sup> One may well ask how agentive such inanimate causees would be.

Finally, it is possible to argue that there is an important semantic difference between the (a) and (b) patterns: Wherever the context is clear enough to permit a judgment, the causee marked by the instrumental seems to be less saliently the agent and/or beneficiary of the action brought about by the act of causation. Thus in (17b), the hunger or pain which afflicts the victim cannot be said to derive any benefit from its action or to be affected by it in any other way. Similarly, in (18b), first example, the point is to get the people to rise up to the deity, not whether they enjoy doing so or derive any benefit from their action. In (25a) the causee stands to benefit from his victory, whereas in (25b) the Aryan fights the Śūdra in a ritualistic combat whose outcome is predetermined and whose benefits go not so much to the combatants as to the ritual and its (other) participants in general. Similarly, in (24a) the plants benefit from their action; but in (24b) the major concern seems to be the seizure of the enemy. Who accomplishes this seizure seems to be less important. Finally, in (26), the (a) example seems to involve a real act of giving. As far as (26b) is concerned, however, the context shows that the act of giving referred to is a metaphorical one in which black and white cows are identified with night and day: 'He pours libations with the milk of a black cow and of a white calf. [Thus] he makes day give night, night give day.' The case is very similar for (19b).-- It should however be noted that of the two types of causee, the instrumental is marked (for decreased agency or affectedness). The accusative, on the other hand, seems to be usable for any type of causee, including quite inanimate and non-affected, non-agentive causees. Thus the context shows that the accusative causee in the second example under (17a) is inanimate, non-affected, etc.

The semantic marking of the instrumental causee may be taken as further evidence that causees of this type are really just instrumentals of means. At the same time, however, there is evidence (as in (17b) śuk rchatu beside śucā ... arpayati) that the instrumentals in question are from nouns which can and do function as subjects of the corresponding non-causatives. Moreover, in examples (18b), (19b), and (26b) there can be no doubt that the doubly underlined instrumentals are in fact causees.

4.4. This rather fluid situation, as well as the special connotations of instrumental causees, would in my opinion be best accounted for by the hypothesis that instrumental causees are an innovation of this period, growing out of a reinterpretation (mainly) of animate instrumentals of means as underlyingly being the subject of the simplex verb. This development was made possible by the fact that causees frequently are not specified on the surface, leaving the causee slot 'empty', as it were. (Cf. sa eva asmai pra dāpayati (TS 2.2.8.4) 'he makes [them] bestow [it] on him'.) It is because this development was still in progress that in many instances it is difficult to decide whether a given instrumental is a causee or not. Moreover, it is the instrumental-of-means origin which accounts for the less agential functions of instrumental causees.

4.5. Here as at the earlier stages of the language, compounds of veda-yati (lit. 'causes to know') are used in the sense of informing and take the dative of the person informed. Examples can be found at AB 1.10.2; TS 3.1.4.1, 6.4.3.3, 7.1.6.5; ŚB 1.4.2.3, 3.2.1.39, 5.4.5.31. Also śrāvayati 'make to hear' = 'inform' and darśayati 'make to see' = 'show' apparently are now attested in this construction (TS 3.3.7.2 and JB 3.193-4). Looking ahead to the language of Classical Sanskrit and of the grammarians we can note that the number of such lexicalized causatives will further increase. Thus, in Pāṇini's Dhātupāṭha cit- 'see, realize', jñā- 'know', vac- 'speak', vad- 'speak', vid- 'know' are listed as non-causative verbs in -aya-, with meanings such as 'inform' or 'instruct'.

As far as object (or causee ?) marking is concerned, sprś- also here causes difficulties: As in the Rig-Veda we find the possibility of instrumentals (AB 7.2.7<sup>14</sup>). Other possibilities include a dual compound in the accusative (prāṇa-udāṇau ... saṃsparśayati (ŚB 4.1.2.24) 'he causes outbreathing and inbreathing to touch [each other]'), as well as double accusatives or double instrumentals connected with each other by ca ... ca 'both ... and' (TS 6.4.3.4, ŚB 3.9.3.29). Moreover, even the simplex can now take an instrumental complement (ŚB 3.9.4.20). These various possibilities confirm, I believe, the semantic explanation for the behavior of the causative of sprś- suggested in 2.3 above. (Note that the instrumental of (23b) above may very well owe its existence to similar semantic considerations.)

4.6. As in the preceding stages, so also here there is a reflexive whose causative creates certain difficulties, namely yajate 'sacrifices for himself': yājayati 'causes s.o. to sacrifice for himself'.<sup>15</sup> For beside yājayati we find an active, simplex yajati 'sacrifices for s.o. else'<sup>15</sup> which refers to the same ritual act as yājayati. However, in this case there is clear syntactic evidence that yājayati is causative, not just "transitive" or non-reflexive: yajati takes the dative of the beneficiary of the act of sacrificing, i.e. of the person for whom the sacrifice is being conducted. yājayati, on the other hand, refers to the same person by means of the accusative of the causee; cf. (32) and (33).

(32) devān devayate yaja (RV 1.5.12; similarly elsewhere)  
sg.D non-caus.

'sacrifice to the gods for the one who is going to the gods'

(33) (a)smān eva aṅgirasah yājayān (ŚB 3.5.1.14)  
pl.A

'may the Angirases make us sacrifice-for-ourselves'

4.7. As in the Rig-Veda, so also in the Brāhmaṇas, the accusative of the causee is promotable to subjecthood in the passive; cf. (34) below, as well as (17a) first example, and (22a) second example above. Moreover, there are examples also of the underlying object promoted. In fact, with verbs like duh- 'milk', which take two accusative objects (that of the animal milked, and that of the milk drawn from the animal), either of the two objects may be promoted; cf. (35) and (36). However, the usual pattern is that only one of the 'objects' of the verb (including the causee) is specified on the surface; and that is the 'object' which has undergone promotion. I have found only one example where two 'objects' are specified; and here it is the causee, not the underlying object which has been promoted; cf. (37). Perhaps not too much should be made of this one example. However, it is noteworthy that in the later, Classical language, promotion of the causee takes preced-

ence over promotion of (other) objects; cf. 5.3 below.

- (34) vīnā asmai vādyate (ŚB 13.1.5.15, TB 3.9.14.1)  
 Sg.N caus.pass.  
 (promot.)  
 'The veena is made to resound (lit. speak) for him'
- (35) agnihotrī dohyamānā (ŚB 12.4.1.9, 12)  
 sg.N caus.pass.  
 (prom.) pres. part.  
 'the Agnihotr-cow, being caused to be milked ...'
- (36) agnihotram dohyamānam (ibid.6)  
 sg.N caus.pass.  
 (prom.) pres. part.  
 'the Agnihotr-milk, being caused to be milked ...'
- (37) agnyupasthānam vācayitavyaḥ (MS 1.6.10)  
 sg.A sg.N (prom.)  
 caus. gerundive  
 '[he] should be made to recite the agnyupasthāna'  
 (The causative gerundive refers to the promoted causee.)

4.8. The most important development of this stage, then, is the introduction of an alternative marking for the causee, namely the instrumental, which appears both with AA and with non-AA causatives. This development clearly seems to be later than the generalization of the causative construction to non-AA verbs. Its source seems to lie in the reinterpretation of an established pattern of (animate) instrumentals of means. It is this origin which explains an important difference between instrumental and accusative causees, namely that the former are marked for reduced 'agency' etc.

These findings, of course, are quite different from those of Cardona's and will therefore call for quite a different explanation of the situation encountered in Pāṇini's language.

4.9. There is, however, a certain potential difficulty with the above explanation, a difficulty which requires some discussion, especially since it will have some bearing on the explanation of Pāṇini's system: To characterize the difference between instrumental and accusative causees, it was necessary to invoke the notion 'affected agent'. It is therefore, one might argue, difficult to see how in examples like (18b) we can have an 'affected-agent' verb (ruh-), but an agent of that verb (the instrumental causee) which is 'not affected'. Similarly, in examples like (26a), how can we have a 'non-affected-agent' verb (dā-), but an 'affected-agent' (accusative-marked) causee?

This difficulty, however, is only an apparent one. For I believe it is legitimate to distinguish between what we might call 'lexical' and 'pragmatic' affected-agent status: By generalization from the more typical situations, verbs such as ruh- 'ascend, climb' whose agent normally can be conceived of as affected by the verbal action, can be entered into the lexicon as [+ affected agent]. And this marking may then permit or disallow the application of certain syntactic processes. However, in actual usage, in particular pragmatic circumstances, such as those obtaining in (18b), the agents of such verbs might not actually be affected by, or benefit from, the action. In those contexts, then, they could pragmatically be treated as [- affected].

Mutatis mutandis, the situation will be the same for lexically non-affected-agent verbs like dā-.

From this point of view, then, the original class of causative verbs is defined by the lexical feature [ $\pm$  affected], while Vedic-prose causee marking is governed by the pragmatic use of that feature.

Moreover, one could argue that since at this Vedic-prose stage, causatives can in principle be made from all verbs, the lexical marking has lost its significance, and only the pragmatic marking is relevant. There would thus be no conflict between these two different classifications.

While this is no doubt the case at some, probably later stage of the language, it is to be expected that this later situation did not come about overnight, but that the old and new systems coexisted for some time. In fact, given that even at this Vedic-prose stage, causatives are much more freely attested with accusative causees than with instrumental ones, that it is still often difficult to distinguish between instrumental-marked causees and means/instruments, and that non-AA verbs still are comparatively rarely attested in causative constructions, it is quite probable that the language of Vedic prose reflects this transitional stage.

Rather than considering this to be an 'unpleasant' difficulty, however, I would view this not only as natural but also as an important motivation for the further developments of the causative. The fact that Classical Sanskrit opted for a pragmatic [ $\pm$  affected] syntax while the language described by Pāṇini decided for a more lexical approach can be seen as divergent attempts to resolve, as it were, the conflict between pragmatic and lexical marking.

(Because the terms 'agentive'/'agency' are shorter than terms like 'pragmatically determined [ $\pm$  affected] marking', I will retain them in much of the following discussion. Similarly, the terms 'affected agent'/AA will be used to refer to lexically determined [ $\pm$  affected] marking.)

## 5. CAUSATIVES IN CLASSICAL SANSKRIT

Except for the fact that the number of non-AA verbs with causative constructions is on the increase,<sup>16</sup> the situation in Classical Sanskrit seems to result from the straightforward generalization of the pragmatically determined [ $\pm$  affected] marking which had arisen in Vedic prose, and the consequent elimination of the lexically determined use of that feature. As Speijer (1886:36-7 with reference) states,

'If one wants to say "he causes me to do something, it is by his impulse I act", there is room for the [accusative causee], but if it be meant "he gets something done by me, I am only the agent or instrument through which he acts", the instrumental is in its place ...'

Though stated slightly differently, this description is eminently compatible with my finding for Vedic prose that the instrumental is marked for decreased 'agency' as compared to the accusative.<sup>17</sup> In fact, the notion of reduced agency seems to be sufficient to characterize also the Classical use of the instrumental and to account for the difference between instrumental and accusative causees.

As a consequence, also here we find instrumental causees with all the sub-classes of the affected-agent class, and accusative causees for non-AA verbs. Some examples are the following.<sup>18</sup> (In each case, I also give an example of the opposite marking, either with the same verb, or at least with a verb which belongs to the same lexical class.)

- (A) Verbs: (38) sa taiḥ ākrāmayām āsa śuddhāntam  
 pl.I caus.  
 'he had them enter the harem'  
 vs. rāmaḥ tām adhyāropayat plavam  
 sg.A caus.  
 'Rāma made her go on board the ship'
- (C) Verbs: (39) tām śvabhiḥ khādayet rājā  
 pl.I caus.  
 'the king should have dogs devour her'  
 vs. mantrapūtam carum rājñīm prāśayat  
 sg.A caus.  
 'he made the queen eat a consecrated porridge'
- (E) Verbs: (40) sūdena tam mallam yodhayām āsa (MBh 7.191)  
 sg.I caus.  
 'he had the cook fight an athlete'  
 vs. samhatān yodhayet alpān (Manu 7.191)  
 pl.A caus. pl.A  
 'he should make a small group fight in close order'
- (F) Verbs: (41) sa ṛṣīn karam adāpayat  
 pl.A caus.  
 'he made the Ṛṣis give = pay tax'  
 vs. pānīyopaḍhaukayitṛpuruṣamukhena ... bilvaphalam ...  
 sg.I  
kāpalikaḥ ... rājñe prādīdat (Vet.6.2-4)  
 caus.  
 'an ascetic had the chief water bearer give the king a bilva fruit'
- (42) yen(a) ... sakhī padam kārītā (Śak.145.7)  
 sg.N caus.  
 (prom.) pass.part.  
 'by whom the friend has been made to place confidence'  
 vs. na śaksyāmi kimcit kārāyitum tvayā  
 caus. sg.I  
 'I will not be able to get anything done through you'

Especially instructive is the following pair of examples, taken from one and the same Sanskrit play. In the active (43), the focus seems to be on getting the letter written, and the agency of Śakaṭadāsa is of secondary importance. Here the causee appears in the instrumental. In (44), however, the focus has shifted to Śakaṭadāsa and the fact that he is the unfortunate person who had been made to write the letter. Consequently he is marked as an agentive causative, underlyingly in the accusative which is then promoted to subjecthood in the passive.

- (43) lekham śakaṭadāsenā lekhaiṭvā (Mudr.1.19.5)  
 sg.I caus.  
 'having had Śakaṭadāsa write the letter'
- (44) yena...tādrśam kapaṭalekham...lekhiṭaḥ tapasvī śakaṭadāsaḥ  
 sg.I sg.A (Obj.) caus. sg.N (promot.)  
 (Subj.demot.) pass.part.  
 (Mudr. 7.9.5-6)  
 'by whom the unfortunate Śakaṭadāsa was made to write such a fictitious letter'
- 5.2. A priori, however, (44) could perhaps also be explained as follows: The alternative causative passive construction (45), with non-promotable instrumental causee (and with consequent promotion of the accusative-marked underlying object) would be extremely unusual, if not downright unacceptable. For structures like (46) and (47) with both causee and demoted subject marked by the instrumental are exceedingly rare.<sup>19</sup> Moreover, even if no instrumental-case demoted subject is specified, instrumental causees seem to be permissible in the passive only in structures of the type (48), where the (promoted) underlying object is human or where, put differently, the promoted object is not lower on the animacy hierarchy than the (instrumental) causee. On the other hand, structures like (49), if they occur at all, seem to be even rarer than those of type (46).<sup>20</sup>
- (45) ???/\* yena...kapaṭalekhaḥ...lekhiṭaḥ tapasvinā śakaṭadāsenā  
 sg.I sg.N (Obj.), caus. sg.I  
 (Subj.dem.) prom. pass.part.  
 'by whom, through unfortunate Śakaṭadāsa, the fictitious letter was caused to be written'
- (46) viśakanyakayā rākṣasena...ghāṭitaḥ tapasvī parvateśvaraḥ  
 sg.I sg.I Subj. caus. sg.N (Obj., prom.)  
 (dem.) pass.part.  
 (Mudr.1.14.4-5)  
 'the unfortunate Parvateśvara has been caused to be killed by Rākṣasa through the agency of the poison-girl'
- (47) tena eva...daṇḍapāśikaiḥ śūlena samāropitaḥ (Vet.148.13-4)  
 sg.I pl.I caus.  
 (Subj.dem.) pass.part.  
 'by him [I was] made to be put on the stake through the agency of the police'
- (48) bhāgurāyaṇa apavāhitaḥ parvatakaputraḥ (Mudr.1.14.7)  
 sg.I caus.pass. sg.N (Obj.prom.)  
 'the son of Parvataka was caused to be driven off through Bhāgurāyaṇa'
- (49) ???/\* śakaṭadāsenā lekhaḥ lekhiṭaḥ  
 sg.I sg.N caus.pass.  
 (Obj.prom.) part.  
 'the letter was caused to be written through Śakaṭadāsa'

The above-noted restriction against structures like (49) seems to be closely linked to the fact that in passives from causatives like (41), where



both accusative-marked causee and underlying object are specified, it is invariably the causee, not the object, that gets promoted to subjecthood, as in (50) below. Only where no causee is present at all can underlying objects be freely promoted, as in (51) below. Structures of the type (52), however, do not seem to be permissible.

- (50) ghātakāḥ tvayā...bhayasamjñām grāhayitavyāḥ (Mudr.1.19.28)  
 pl.N sg.I sg.A (Obj.) caus.gerundive  
 (prom.)(Subj.dem.)  
 'the executioners should be made by you to take fear'
- (51) bhartrā ... prasādaḥ ... dāpitaḥ (Śak.223.13)  
 sg.I sg.A (Obj.) caus.  
 (Subj.dem.) prom.) pass.part.  
 'the present has been caused to be given by the master'
- (52) \*ghātakān tvayā... bhayasamjñā grāhayitavyā  
 pl.A sg.I sg.N (Obj.)  
 (Subj.dem.) prom.) caus.gerundive  
 (translation virtually impossible)

This leads to the conclusion that in Sanskrit the accusative of the causee is 'higher' on the promotability hierarchy than the underlying object. Moreover, even when marked instrumental, the causee seems to retain some of this 'higher' status, by blocking promotion of underlying objects which are lower in the animacy hierarchy. This is interesting, considering that conventional wisdom has it that in causative clause union the causee gets demoted to a position lower than that of the underlying object, even where morphologically the two are marked identically.

## 6. CAUSATIVES IN THE LANGUAGE OF THE GRAMMARIANS

6.1. As noted earlier, the language described by Pāṇini, roughly contemporary with the later stages of Vedic prose, has a causative syntax which markedly differs from what we have observed in sections 4 and 5. In some ways this situation looks remarkably archaic, in that it is based on lexical, not pragmatic marking. In other ways, however, it is perhaps just as much removed as the Classical language from what we find in the Rig-Veda and in the later mantra collections, except that its divergence is in a different direction.

The major distinction in Pāṇini's grammar is between intransitives and Class (A)-(D) ingestives on one hand and other verbs on the other. (Cf. Pāṇini's sūtra 1.4.52 and the discussion in Cardona 1978.) The former take accusative causees, the latter instrumentals. The only exceptions are hr- 'take, carry' and kr- 'do, make' which offer an option between instrumental and accusative (cf. 1.4.53). Moreover, there is no indication that there might be a difference between accusative causee and accusative object in terms of their promotability to subjecthood in the passive. Presumably, both are equally promotable. (For examples illustrating these various patterns of causee marking and of passive promotion, see Cardona 1978:1-9.)

6.2. The question which must of course arise is the following: How can this system, so radically different from the Vedic prose-Classical language tradition and also quite different from the early Vedic system(s), be related to these other systems?

A priori it would be possible to assume that Pāṇini's language derives from a source different from the type of language represented in the Rig-Veda, and that in this different source, non-ingestive affected-agent verbs simply never formed causatives in -aya-. However, considering that Pāṇini's language hails from the extreme Northwest of Ancient Indo-Aryan and that most of the Rig-Veda likewise comes from that region, this argument is not very attractive.

It is also possible to claim that Pāṇini's very different system is different because it has a very different historical development, more along the lines of Cardona's hypothesis than along those suggested here for Vedic prose. True, some special provision would have to be made, so as to narrow the Rig-Vedic affected-agent class to just the ingestive sub-classes. However, this could be easily done along more or less the same line of reasoning as that which will be developed below.

The only argument against this view would be that it is not necessary, because it is perfectly possible to derive Pāṇini's system from that of Vedic prose by means of developments diverging from those postulated for the Vedic prose-Classical Sanskrit tradition, but nevertheless quite straightforward and motivated:

As noted in 4.9, there is reason to believe that at the time (roughly) of Vedic prose, two systems were still in competition with each other, one in which the feature [ $\pm$  affected] was a lexical one and defined the classes of verbs traditionally accepted in the causative construction, the other in which the feature was a pragmatic one and determined the case of the causee. In the Classical language, this competition was resolved in favor of the pragmatic feature. However, there is no reason against a different variety of Sanskrit making the opposite choice, by emphasizing the lexical feature.

Let us assume that this is what happened in the (pre-)history of Pāṇini's language. What plausible consequences might this have?

For one thing, we might expect the instrumental marking of the relatively non-affected-agent causee to become associated with, and generalized for, the lexically non-AA verbs, while the AA accusative would become connected with AA verbs. Some verbs, especially relatively basic ones like hr- and kr- could then, as an archaism, retain traces of the earlier option. But since the lexical, not the pragmatic feature [ $\pm$  affected] has become the important one, this option would lose its old semantic/pragmatic connotations.

However, as noted earlier, the notion 'affected agent' is an inherently unstable one, since the borderline between AA and non-AA verbs is not clear-cut, but gradient. Especially the borderline between class (E) and class (F) verbs is a very difficult one to draw. There seems rather to be a simple continuum, from very much affected to very little. Moreover, in some of the old class (E) verbs, most notably in sprś- 'touch' (but presumably also in a number of other semantically similar verbs; cf. e.g. śliṣ-), there was the difficulty that causee and object are not always clearly distinguishable and that in addition, instrumental case marking was one of the options for this indistinguishable causee/object category. Under these circumstances, a good way out would seem to consist in giving up the idea of drawing a borderline between class (E) and class (F) verbs and to establish the line further 'up' (in terms of affectedness), at the more clearly defined border between 'in-

gestive' and 'non-ingestive' transitives. With this development, however, the stage of Pāṇini's language has been reached.

6.3. Later grammarians proposed a number of additions and modifications to Pāṇini's rules. (Cf. e.g. Liebich 1886a:211-12.) The purpose of the additions and modifications, however, is not always clear. For instance, if a vārttikā states that nī- 'lead' and vāh- 'convey' take the instrumental causee, not the accusative, does this mean that there has been a change in the language? And if so, in what language? That is, did there continue to exist a grammarians' Sanskrit, separate from the Vedic prose-Classical tradition? Or do these statements perhaps rather reflect attempts to reconcile the differences between actual usage (within the Vedic-Classical tradition) and the rules laid down in Pāṇini's grammar which, in principle, had gotten to be accepted as the model for correct Sanskrit usage? The fact that most of these statements address relatively minor issues and do not seem to reflect actual usage in the Vedic-Classical tradition any better than does Pāṇini's grammar, suggests that these statements were indeed simply isolated, non-systematic attempts to reconcile a particular usage noted by a given grammarian with the rules laid down by Pāṇini.

For these reasons I believe that this historical account of the Sanskrit causative can stop with Pāṇini and need not concern itself with post-Pāṇinian grammarians.

## 7. CONCLUSIONS

The major conclusions reached in this paper can be summarized as follows: At its earliest attested stage, Sanskrit already permitted causatives from intransitives and (certain) affected-agent transitives. If we disregard lexicalization, the marking of the causee is accusative; and this accusative causee acts like a genuine object in being promotable to subjecthood in the passive of the causative.

The next stage of the language, that of the post-Rig-Vedic mantra collections, gives evidence that the class of verbs open to the causative construction was being expanded to include all transitives. The case of the causee remains accusative, even for the new transitive additions.

It is at the next stage, that of Vedic prose, that the next important step is taken, namely the development of an alternative, instrumental causee marking, apparently resulting from reinterpretation of (animate) instrumentals of means/instrument. This origin accounts for the special, less 'agentive' connotations of this new marking. The resulting conflict between a lexically determined notion 'affected agent' and a pragmatic one can be considered to give rise to divergent developments in the Classical language on one hand, Pāṇini's language on the other. The former opts for the pragmatic approach and thus continues the development begun in Vedic prose. The latter chooses the lexical approach and thus, in a sense, reverses the Vedic-prose development. (In Pāṇini's language, a further change leads to a lexical reclassification: the major distinction now is between ingestive and non-ingestive verbs, not between affected-agent and non-affected agent verbs.)

Both the Classical and Pāṇini's language continue the phenomenon already observed in the Vedic language, namely that accusative causees are pro-

motable to subjecthood in the passive. In Classical Sanskrit, there is in addition a strong tendency to give preference to the accusative causee over the accusative object for promotion (if both causee and object are specified). Moreover, even instrumental causees block object promotion if the object is lower on the animacy hierarchy. This suggests that in causative clause union the causee is, in Sanskrit, demoted to a position higher than the underlying object.

## NOTES

<sup>1</sup>This work has been in part supported by a 1979/80 grant from the University of Illinois Research Board. It has grown out of, and benefited from, conversations with my friend George Cardona, during the 1978 Linguistic Institute at the University of Illinois. The conclusions reached in this paper, however, are clearly different from Cardona's. I have also benefited from discussions with participants in my seminar on diachronic syntax, offered Spring 1980 in the Department of Linguistics, University of Illinois. Any errors and omissions in this paper, however, must be considered my responsibility.

<sup>2</sup>Accent, being irrelevant to the discussion, has been omitted in all examples given in this paper. In addition, sentences are quoted with words in their 'pausa' form, without the external sandhi which often obscures word boundaries. Data from the Rig-Veda, Atharva-Veda, Vajasaneyi-Saṃhitā, Kāṭhaka-Saṃhitā, Aitareya Brāhmaṇa, Jaiminiya Brāhmaṇa, Taittirīya Saṃhitā and Brāhmaṇa, Śatapatha Brāhmaṇa, Kālidāsa's Śakuntalā, Viśākhadatta's Mudrārākṣasa, and the Vetālapañcaviṃśati have been collected and/or cross-checked by myself. (Except for the Atharva-Veda, I have worked through what I believe are all the relevant attestations in these texts. For the Atharva-Veda I have relied mainly on cross-checkings of forms quoted elsewhere in the literature.) Other data come largely from the following sources: For other Vedic texts, Cardona 1978 and Delbrück 1888, plus Wecker 1906 for the Upaniṣads; for the Classical literature, Speiser (1886:36-8) and Renou (1961:472-3); for the grammarians, Pāṇini's Aṣṭādhyāyī and Cardona 1978, Liebich 1886a.

<sup>3</sup>For simplicity of exposition, Cardona's presentation has been modified.

<sup>4</sup>Cardona continues (ibid., with n. 22) by stating that this pattern persists into Modern Indo-Aryan, including Hindi. However, as I will show elsewhere in greater detail, the major distinction in Hindi is not between intransitives and class (A)-(D) verbs on one hand and other transitives on the other. Rather, it is between intransitives and 'affected-agent' transitives on one hand and other transitives on the other. For the time being, see Kachru 1976 and 1979.

<sup>5</sup>In fact, there must be some question as to whether these are really transitive in Rig-Vedic Sanskrit: The only passive-like attestation found from any of the (A) verbs in Rig-Vedic times, at a time when only transitives can appear in the passive construction, is the example quoted by Cardona (22): ... gataḥ na adhvā 'like a path that has been traversed'. The promoted object of this sentence, however, seems to be semantically and syntactically comparable to the 'cognate' or 'etymological' objects which can appear with many other, clearly intransitive verbs. (Cf. Engl. I dreamt a dream : a dream was dreamt.) Moreover, even in later Sanskrit, including that of Pāṇini,

verbs of going only optionally have the promotional passives typical of transitives. They can also take the purely demotional passive of intransitives. Cf. Cardona's examples (30) and (62).

<sup>6</sup>This term has recently been the title of a paper by Saksena (1980). However, Saksena's evidence consists only of ingestive verbs and thus does not go substantially beyond Masica 1975. Moreover, as I will show elsewhere, some of her arguments do not hold even for all of the ingestive verbs, in the language treated by her. A much better treatment, using different terms, is that in Kachru 1976:363, 368 and 1979:310, 313.

<sup>7</sup>It may be speculated that these developments had taken place in the extreme Northwest, from which Pāṇini hailed. The Vedic prose-Classical tradition, on the other hand, should perhaps be attributed to the central area of Madhyadeśa which had become the center for most religious and literary activities. (Cf. Hock and Pandharipande 1976:125-8 (with n. 9a) for discussion and references concerning this dialectal distinction.)

<sup>8</sup>Here as elsewhere my discussion will be limited to the verbs of classes (A)-(F) and to genuine causatives of these verbs. Moreover, except for a few relevant cases, I will not discuss what happens to the underlying object or goal of such verbs. As Cardona correctly has shown, the normal pattern is for the case of the object or goal to be retained in the causative active.

<sup>9</sup>Not all instances of the -aya-formations of this root have causative value; but some clearly do.

<sup>10</sup>Of these causatives, two have outside cognates suggesting that also these affected-agent causatives may be inherited. For vāsaya- 'make s.o. wear s.th.; clothe s.o.', cf. Goth. wasjan, OE werian 'clothe (oneself/s.o. else)', OHG werian, ON verja 'clothe s.o.'. (The tendency in Germanic is to use this verb not only transitively, but also reflexively/intransitively.) For yodhaya- 'make s.o. fight, order (in)to battle', cf. Lat. iubeō, OLat. ioubē- 'order'. (On the phonological developments and remakings in Latin, cf. Leumann et al. 1977:541.) Note also that at least for the root yudh- there is syntactic synchronic evidence for its transitivity, namely ayuddha- (RV 8.35.3, 10.27.10) 'irrestible, not to be fought (against)', with passive-like value of the negated past participle. (For vas- and sprś- no unambiguously passive-like formations seem to occur in the early language. vas- has no attestations whatsoever of potentially passive-like ta-participles; sprś- only has a few, but none of these gives unambiguous evidence concerning transitivity.)

<sup>11</sup>As a consequence, Haudry's claim (1977:383-4 and passim) that the Vedic accusative-marked causee is not a true object needs to be reconsidered.

<sup>12</sup>The discussion of this section will be limited to the evidence of the older, Brāhmaṇa texts (including the brāhmaṇa portions of the various samhitās of the Black Yajur-Veda), except that the Bṛhad-Āraṇyaka is here included as part of the Śatapatha Brāhmaṇa. The description in Wecker 1906, supplemented by Cardona's examples, suggests that the situation in the later Vedic prose is not substantially different.

<sup>12a</sup>The instrumental in (21b), then, may have been mechanically transfer-

red from (22b) which closely precedes in the same passage.

<sup>13</sup> However, in all fairness it should be mentioned that in this formulaic expression, animate 'causees' predominate.

<sup>14</sup> Liebich (1886b:271), apparently unaware of the antiquity and special motivation of this pattern, identifies this as an example of instrumental causee.

<sup>15</sup> These glosses are intended only for identification. The actual meanings are more complex: In Vedic ritual, the person (A) who 'sacrifices for himself' normally does not actually perform the sacrifice, but has it performed on his own behalf by a priest who is said to 'sacrifice for A' or to 'cause A to sacrifice for himself/be a sacrificer'.

<sup>16</sup> Cf. the data in Whitney 1885.

<sup>17</sup> In fact, it must be said in all fairness that in addition to Cardona's paper, it was my much earlier reading of Speijer's account and my realization both of its general accuracy for Classical Sanskrit and of its considerable difference from the predictions of the grammarians which got me interested in further exploring the history of this construction.

<sup>18</sup> Unless otherwise indicated, the examples in this section are from Speijer 1886, where the sources of the examples are detailed.

<sup>19</sup> Cf. also Speijer 1886:38.-- In fact, (47) seems to be an example of a passive from a double causative. And though double causatives are not frequently attested in the literature, it seems that the 'topmost' causee in such constructions normally appears in the instrumental, not in the accusative. That is, the corresponding active would have had the causee in the instrumental to begin with: sa ... dandapāsikaiḥ mam śulena samāropayati 'he has the police make me climb with = on the stake'. Moreover, in this example the promoted NP is not the underlying object, but the 'lower-level' causee.

<sup>20</sup> Structures of this sort are, however, freely permissible if the instrumental noun phrase is not the causee, but the demoted subject, as in cāpakayena prathamalekhitāḥ ... lekhaḥ (Mudr.5.1.8-9) 'the letter first caused to be written by Cāpakya'. Cf. also examples (50) and (51).

#### ABBREVIATIONS OF TEXTUAL REFERENCES

AB = Aitareya Brāhmaṇa; AV = Atharva-Veda (Śaunaka recension); JB = Jaiminiya Brāhmaṇa (Caland's selections); KS = Kāṭhaka-Saṃhitā; MS = Maitrayāṇī-Saṃhitā [non vidi]; Mudr. = Mudrārākṣasa (references to the 1930 edition by Dhruva); RV = Rig-Veda; ŚB = Śatapatha Brāhmaṇa (Mādhyandina recension); Śak. = Śakuntalā (page and line references to the 1886 Monier-Williams edition); TB = Taittirīya Brāhmaṇa; TS = Taittirīya-Saṃhitā; VS = Vājasaneyi-Saṃhitā (Mādhyandina recension); Vet. = Vetālapañcaviṃśati (Jambhaladatta's version; page and line references to the 1934 Emeneau edition).

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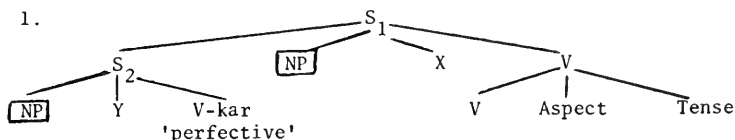
ON THE SYNTAX, SEMANTICS AND PRAGMATICS  
OF THE CONJUNCTIVE PARTICIPLE IN HINDI-URDU

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The conjunctive participial construction in Hindi-Urdu has several meanings such as consecutive action/process, manner, cause, etc., and has been the topic of much linguistic discussion. This paper examines the three major claims made recently with regard to this construction: (a) Its various meanings notwithstanding, the conjunctive participle is derived from one simple subordinate source (Davison 1981); (b) the participle marker *kar* has a 'perfective' meaning (Davison 1981); and (c) the main verb determines whether the adverbial interpretation is preferred (Abbi 1980, Davison 1981). A wide range of data and a number of arguments are presented in this paper to show that none of the above claims can be supported. Instead, it is argued that (a) the construction represents a target structure phenomenon (Green 1974), i.e., several underlying representations all end up as the participial construction on the surface; (b) the participle marker *kar* has at least two different meanings, 'perfective' and 'simultaneous'; and (c) the semantics of both the participle and the main verb together determine whether the adverbial interpretation is possible. It is pointed out in the conclusion that 'a mostly pragmatic' analysis of the construction (Davison 1981) misses a number of crucial syntactic and semantic generalizations.

INTRODUCTION

The conjunctive participial construction (hereafter CP) in Hindi-Urdu has been investigated in a number of recent studies (Abbi 1980, Bahl 1974, Bhatia 1977, Davison 1981, Dwarikesh 1971, Kachru 1965, 1966, 1978, 1980, to name just a few). The most interesting claim that has been made so far is that the several meanings associated with the conjunctive participle are all pragmatically determined (Davison 1981). In this paper, I shall examine this claim and provide various arguments to show that the meanings of the construction under focus are to be accounted for in terms of its syntax and semantics and in most cases, it is unnecessary to invoke pragmatic principles.<sup>1</sup> I shall do so by first examining the following three claims of Davison 1981 and showing how they do not work: one, the conjunctive participle has the following syntactic and semantic underlying representation (Davison 1981):



Second, the conjunctive participle marker kar has a 'perfective' meaning (Davison 1981) and, third, the main verb determines whether the adverbial interpretation is preferred (Abbi 1980, Davison 1981).<sup>2</sup>

In my view, none of the above claims can be supported if the total range of data is taken into consideration. In fact, the evidence supports the hypothesis that the conjunctive participial construction is a target structure phenomenon. That is, several underlying representations are realized on the surface as the conjunctive participial construction. Second, the syntactic and semantic evidence show that 'perfective' is not the only meaning associated with the formative kar. Third, it is not just the properties of the main verb that determine the adverbial meanings. Rather, the properties of the subordinate verb that takes the kar and the properties of the main verb jointly determine if specific verbs could occur in the underlying representations that are realized as adverbials.

#### THE DATA

Let us consider a range of data which consists of sentences with the conjunctive participles and their paraphrases. Examples 2-4 are clear cases of temporal reading where the main verb expresses process or action subsequent to the process/action expressed by the participle.

2. usne nahaa kar khaanaa khaayaa<sup>3</sup>  
 he ag. bathed CP meal ate  
 Having bathed, he ate (his) meal.
- 2a. usne nahaaya aur tab khaanaa khaayaa  
 he ag. bathed and then meal ate  
 He bathed and then ate (his) meal.
3. ghar aakar raaj ne kapRe badle  
 home come CP Raj ag. clothes changed  
 Having come home, Raj changed.
- 3a. raaj ghar aayaa aur tab usne kapRe badle  
 Raj home came and then he ag. clothes changed  
 Raj came home and then changed.
4. New York jaa kar mujhe pataa calaa ki shyaam biimaar hai  
 New York go CP I came to know that Shyam ill is  
 Having arrived in New York, I came to know that Shyam was ill.
- 4a. māI New York gayaa aur tab mujhe pataa calaa ki shyaam  
 I New York went and then I came to know that Shyam  
 biimaar hai  
 ill is  
 I went to New York and then I came to know that Shyam was ill.

Note that in each case, the process or action expressed by the CP precedes the process (4) or action (2-3) expressed by the main verb.

In this case, the CP has a 'perfective' meaning.

In examples 5-8, the CP's express a manner adverbial meaning.

5. (vahāā baRii phislan thii), khuub pāāv jamaakar  
 there much slipperiness was well feet plant CP  
calnaa paRaa  
had to move  
 It was very slippery, we had to walk with very steady steps.
- 5a. \*...khuub pāāv jamaanaa paRaa aur tab calnaa paRaa<sup>4</sup>  
 well feet had to plant and then had to walk  
 ...We had to plant our feet very firmly and then walk.
- 5b. ...khuub sadhe pāāvvo se calnaa paRaa  
 well steady feet with had to move  
 ...We had to walk with very steady steps.
6. vah ThaThaa kar hās paRaa  
 he explode CP laugh fell  
 He burst out laughing (in peals of laughter).
- 6a. \*vah ThaThaayaa aur tab hās paRaa  
 he exploded and then laugh fell
- 6b. vah baRe zorō se hās paRaa  
 he very loudly laugh fell  
 He burst out laughing (loudly).
7. vah sabse hās kar baatē kartaa hai  
 he all with laugh CP talking does  
 He talks to everyone pleasantly.
- 7a. \*vah sabse hāstaa hai aur tab baatē kartaa hai  
 he all with laughs and then talking does  
 He laughs with everyone and then talks (to them).
- 7b. vah hāstaa hai aur tab sabse baatē kartaa hai  
 he laughs and then all with talking does  
 He laughs and then talks to everyone.
- 7c. vah sabse hāste hue / prasanna citta se baaTē kartaa hai  
 he all with laughing happy heart with talking does  
 He talks to everyone pleasantly/happily.
8. vah mere saamne se katraa kar nikal gayaa  
 he my front from avoid CP emerge went  
 He passed in front me avoiding (me).  
 I.e., He shied away from me.
- 8a. \*vah mere saamne se katraayaa aur tab nikal gayaa  
 he my front from avoided and then emerge went

- 8b. \*[vah katraayaa] aur tab mere saamne se nikal gayaa  
 he avoided and then my front from emerge went
- 8c. vah mujhse bactaa-huaa-saa mere saamne se nikal gayaa  
 he me from saving like my front from emerge went  
 He passed in front of me, in a way avoiding me.

Notice that in cases of 5-8, the (a) versions which are paraphrases with the conjunction 'and then' are ungrammatical. In cases of 5-6, the (b) versions are close paraphrases with manner adverbs. In case of 7, the (b) version is acceptable, but semantically distinct, the (c) version is a close paraphrase with manner adverbials. In the case of 8, the first clause in (8b) is ungrammatical, (8c) is a close paraphrase with a manner adverbial. Note also that the CP's in 5-8 can be conjoined with other manner adverbials.

9. is tarah pāv jamaa kar nahī, halke se calo  
 this way feet plant CP not lightly walk  
 Walk lightly, not so firmly.
10. usne mujhse hās kar nahī, beman se baatē kī  
 he ag. me with laugh CP not unwillingly talking did  
 He talked to me unwillingly, not pleasantly.

Such conjoining in cases of 2-4, yields semantically anomalous results.

11. \*usne nahaa kar nahī, xushii se khaanaa khaayaa  
 he ag. bathe CP not happily meal ate  
 He ate his meal happily, not after his bath.
12. \*raaj ne ghar aakar nahī, utsuktaa se kapRe badle  
 Raj ag. home came CP not enthusiastically clothes changed  
 Raj changed his clothes enthusiastically, not after coming home.

If, however, the conjoined versions of 2-3 contain time adverbials, the resulting sentences are grammatical.

- 11a. usne nahaa kar nahī, Thiik mūh dhone ke baad/nahaane se  
 he ag. bath CP not exactly face washing after bathing from  
pahle/roTii bante hī khaanaa khaa liya  
before as soon as the bread was made meal eat took  
 He ate his meal just after washing his face/before bathing/  
 as soon as the bread was made, not after bathing.
- 12a. raaj ne ghar aakar nahī, usse pahle/Tenis khelne ke baad/  
 Raj ag. home come CP not that before tennis playing after  
das baje kii xabar sunte hue kapRe badle  
10 o'clock news listening clothes changed  
Raj changed his clothes before coming home/after playing tennis/  
while listening to the 10 o'clock news, not after coming home.

It is clear that the temporal CP expresses sequential action, the CP with manner adverbial meaning does not express sequential action/process. The manner in which such an act is performed or a process takes place has to be coextensive with it in time. Hence, in these cases, kar could not mean 'perfective'.<sup>5</sup>

The next set of sentences has concessive (13-14), antithetical (15-16), and causal (17-18) meanings.<sup>6</sup>

13. tum mere mitra ho kar bhii meraa vishvaas nahii karte  
 you my friend be CP even my trust not do  
though  
 You don't trust me even though you are my friend.
14. apne dost ramesh se mil kar bhii use xushii nahii huii  
 self's friend Ramesh with meet CP even him happiness not happened  
though  
 He was not happy even though he met his friend Ramesh.
15. mohan khaanaa na khaa kar TV dekhne lagaa  
 Mohan meal not eat CP TV see began  
 Mohan began to watch TV instead of eating.
16. savitaa shaam ko ghar na aakar ajaayabghar calii gaii  
 Savita evening home not come CP museum went off  
 Savita went off to the museum instead of coming home in the evening.
17. vah raat - din kaam karke biimaar paR gayaa<sup>7</sup>  
 he night-day work do CP ill fall went  
 He fell ill (because of) working day and night.
18. vah Duub kar mar gayaa  
 he drown CP die went  
 He died by drowning.

Sentences 13-18 have the following exact paraphrases.

- 13a. yadyapi/haalāāki tum mere mitra ho, to/phir bhii meraa  
 although you my friend are then even my  
 vishvaas nahii karte  
 trust not do  
 Although you are my friend, you don't trust me.
- 14a. yadyapi vah apne dost ramesh se milaa phir bhii use xushii  
 although he his friend Ramesh with meet even so him happiness  
 nahii huii  
 not happened  
 Although he met his friend Ramesh, he didn't feel happy.

- 15a. mohan khaana khaane ke bajaay TV dekhne lagaa  
 Mohan meal eat instead TV see began  
 Mohan began to watch TV instead of eating.
- 15b. mohan ne khaanaa nahĩĩ khaayaa, ulTe TV dekhnee lagaa  
 Mohan ag. meal not ate instead TV watch began  
 Mohan didn't eat, instead, he began to watch TV.
- 16a. savitaa shaam ko ghar nahĩĩ aaii, ulTe ajaayabghar calii gaii  
 Savita evening home not came instead museum went off  
 Savita didn't come home in the evening, instead, she went  
 off to the museum.
- 16b. savitaa shaam ko ghar aane ke bajaay ajaayabghar calii gaii  
 Savita evening home come instead museum went off  
 Savita went off to the museum instead of coming home in the evening.
- 17a. vah raat - din kaam karne kii vajah se biimaar paR gayaa  
 he night day work doing because of ill fall went  
 He fell ill because of working night and day.
- 18a. vah Duub jaane kii vajah se mar gayaa  
 he drown going because of die went  
 He died because of drowning.

It is tempting to suggest that the concessive reading in 13-14 is a function of the particle bhii and the negation of the main verb, as has in fact been suggested in Davison 1981. But, this would not work, since it is not obligatory for the subordinate or the main clause to be in the negative and for the CP to be followed by the particle bhii. What is needed is a strong element of unexpectedness and one of the markers, as in 19-20.

19. unkaa laRkaa caudah saal kaa ho kar bhii akele sone mẽ  
 their son fourteen year of be CP even alone sleep in  
though  
Dartaa hai  
afraid is  
 Their son is afraid of sleeping alone eventhough he is fourteen.
20. usne caar saal landan rah kar (bhii) briTish myuuziam  
 he ag. four years London live CP even British Museum  
though  
nahĩĩ dekhaa  
not saw  
 He didn't see the British Museum even though he lived in  
 London for four years.

It should be pointed out that although both the temporal CP as well as the concessive CP can be followed by the particle bhii, only the former has an inclusive meaning. Compare sentences 21 and 22, below.

21. vah ghar jaakar bhii paRhega  
 he home go CP also study will  
 He will study also after going home.
- 21a. (vah din bhar laaibrerii mē paRhega) iske alaavaa ghar  
 he day whole library in study will in addition home  
 jaa kar bhii paRhega  
 go CP also study will  
 He will study in the library all day, in addition, he will  
 also study after going home.
22. vah raajpuut ho kar bhii laRaaii se Dartaa hai  
 he warrior be CP even war from fears  
though  
 He is afraid of wars even though he is a warrior.
- 22a. vah shantipriya hai, isliye laRaaii se Dartaa hai. \*iske  
 he pacifist is therefore war from fears in  
alaavaa raajpuut ho kar bhii laRaaii se Dartaa hai  
addition warrior be CP also war from fears  
 He is a pacifist, therefore, he is afraid of wars. \*In addition,  
 he is also afraid of wars being a warrior.

The particle bhii 'even' in 22, is an integral part of the concessive conjunction and contributes to the "contrary to expectation" meaning. The particle bhii 'also' in 21, on the other hand, is the "inclusive" particle as in 23.

23. is itvaar ko mere kaa dost aa rahe hāī, aur ek  
 this Sunday my several friends come -ing are and one  
 rishtedaar bhii.  
 relative also  
 This Sunday, several of my friends are visiting me, and also  
 a relative of mine.

The antithetical meaning in 15 and 16 is not pragmatically determined, in fact, both 34b and 35b cited in Davison 1981 are grammatical [24-25 in this paper].

24. raajaa [mere paas] na aakar kitaab paRhne lagaa  
 Raja [to me] not come book read began  
 Raja began to read instead of coming [to me].
25. vah patra na paRh kar bolaa [ki...]  
 he letter not read CP spoke [that...]  
 Instead of reading the letter, he said [that...]

The na 'not' preceding the CP in 24-25, signals the meaning 'contrast'. The temporal, manner, or causal adverbial CP's may not have na 'not' in them; the temporal has an alternate construction as in 26 to negate the CP.

26. \*usne na nahaa kar khaanaa khaayaa  
 he ag. not bathe CP meal ate

- 26a. usne binaa nahaae khaanaa khaayaa  
 he ag without bathing meal ate  
 He ate his meal without bathing.
27. \*vah sabse na hās kar baatē kartaa hai  
 he all with not laugh CP talking does  
 He talks to everyone not laughing.  
 pleasantly.
- 27a. \*vah sabse binaa hāse baatē kartaa hai  
 he all with without laugh talking does  
 He talks to everyone not laughing.  
 pleasantly.
28. \*vah raat - din kaam na karke biimaar paR gayaa  
 he night day work not do CP ill fall went  
 He fell ill because of not working day and night.
- 2 a. \*vah binaa raat - din kaam kiye biimaar paR gayaa  
 he without night day work doing ill fall went  
 He became ill because of not working day and night. [I. e.,  
 His not working day and night was the cause of his illness.]

The reason for this distribution of the negative particle is clear. In sentences with temporal CP, the negative may have the CP, the finite verb or the entire predicate in its scope, as is evident from the following.

29. usne nahaa kar khaanaa nahīī khaayaa  
 he ag. bathe CP meal not ate  
 He didn't eat his meal after bathing.
- 29a. usne nahaa kar khaanaa nahīī khaayaa, nahaane se pahle  
 he ag. bathe CP meal not ate bathing from before  
 khaa liyaa  
 ate  
 He didn't eat after bathing, he ate before bathing.
- 29b. usne nahaa kar khaanaa nahīī khaayaa, siidhe dafter calaa gayaa  
 he ag. bathe CP meal not ate straight office went off  
 He didn't eat after bathing, he went off to his office (after bathing).
- 29c. usne nahaa kar khaanaa nahīī khaayaa, haath-mūh dho kar  
 he ag. bathe CP meal not ate hand face wash CP  
 sirf caay pii lii  
 only tea drink  
 He didn't eat after bathing, he only had tea after his wash.

In case of manner, cause, etc., as expected, usually the adverbial is in the scope of negation.



30. tum man lagaa kar nahii paRhete  
 you mind apply CP not study  
 You don't study diligently.
31. vah tumhaarii baatē sun kar dukhii nahii huaa hai  
 he your talking listen CP sorrowful not become has  
 He is not sad because of what you said.

This is true of adverbs of manner, cause, instrument, etc., as is clear from the following.

32. usne jaldi se/kāfcii se/ tumhaare kahne kii vajah  
 he ag. quickly scissors with your saying of reason  
 se parde nahii kaate  
 from drapes not cut  
 He didn't cut the drapes quickly/with scissors/because of your asking him to.

In 32, the adverbs 'quickly', 'with scissors', 'because of your asking' are in the scope of negation (Bhatia 1977). Similarly, in 30 and 31, the CP's are in the scope of negation. It is hard to imagine why one would have to specify negative manner, cause, or instrument for actions/processes unless contrastive information is to be given. In that case, however, the regular strategy illustrated in 9-10 is adopted.

#### THE MEANINGS OF CP

To sum up the discussion so far, at least five different meanings of the CP construction are illustrated in the above examples. These may be labelled as: 'and then', manner, causal, concessive, and antithetical. This does not mean that some CP's are not ambiguous, in fact, the following is structurally ambiguous.

33. usne ghar aakar bhii khaanaa nahii khaayaa  
 a) He didn't eat even though he came home.  
 b) He didn't eat after coming home either.

In the sense of 33b, the particle hii 'only' can replace the particle bhii 'even' in which case the sentence would mean "he didn't eat only after coming home."<sup>8</sup> In the sense of 33a, hii 'only' can not replace bhii 'even'. The structural properties that distinguish the five different meanings are as follows:

(a) The 'and then' temporal sequential CP answers the question 'when', whereas the manner and causal adverbs answer the question 'how' and 'why';

(b) The particle bhii 'even' is an obligatory constituent of the concessive, and na 'not' of the antithetical, tab 'then' is an optional constituent of the 'and then' CP;

(c) The 'and then' CP may contain the inclusive particle bhii 'also, even' or the exclusive particle hii 'only' optionally whereas the concessive cannot contain hii 'only';

(d) The temporal sequential, manner, and causal adverbials may be conjoined with like-adverbials but not with unlike-adverbials, as is clear from 34a and 35a below.

34. vah patra likh kar aur use Daak mē Daal kar tab soyaa  
 he letter write CP and it mail in put CP then slept  
 He slept after writing the letter and mailing it.
- 34a. \*vah mere kamre me aakar aur thak kar so gayaa  
 he my room in come CP and tire CP sleep went  
 He went to sleep after coming into my room and because of  
 being tired.
35. usne merii salaah maan kar aur uske anusaar cal kar  
 he ag. my advice accept CP and it of according proceed CP  
 saphaltaa praapt kii  
 success obtain did  
 He obtained success by listening to my advice and following it.
- 35a. \*usne merii salaah maan kar aur hās kar sabse baatē kii  
 he ag. my advice accept CP and laugh CP all with talking did  
 He talked to everyone because of my advice and pleasantly.

The structural properties and paraphrase relations taken together suggest that the CP-construction must be derived from several underlying representations.

#### UNDERLYING REPRESENTATIONS: A TENTATIVE PROPOSAL

A tentative proposal as to the underlying representations needed to derive the range of CP's discussed in this paper is as follows.

36. a. SEQUENTIAL: possibly a coordinate source. Note that the CP and the finite verb can have different time adverbs:

- (i) raaj das saal landan rah kar kal hii dillii lauTaa hai  
 Raj ten years London live CP yesterday only Delhi returned has  
 Raj came back to Delhi only yesterday after spending ten  
 years in London.

Note that barring a few exceptions (Kachru 1980), the subject of CP must be identical to the subject of the finite verb, which may be termed the like-subject constraint.

b. CAUSAL: a subordinate source common to CP and kii wajah se. The CP construction is possible only if the like-subject constraint holds.

c. MANNER: a subordinate source common to CP and other manner adverbs: the like-subject constraint holds for the CP construction.

d. CONCESSIVE: a subordinate source with the markers yadyapi/haalāāki...to/phir bhii; for CP construction, the like-subject constraint holds.

e. ANTITHETICAL: possibly a coordinate source with the antithetical conjunction ulTe 'instead'; the ke bajaay phrase is a reduced version and so is the CP, the CP having an additional constraint (like-subject).

That the properties of the finite verb and the CP must be compatible is evident from examples such as the following.

37. vah baRii ho kar Daaktar banegii  
 she big become CP doctor become will  
 She will be a doctor when she grows up.
38. \*vah man lagaa kar biimaar paR gayaa  
 he mind apply CP ill fall went  
 \*He fell ill attentively.

#### CONCLUSION

It is clear that more research is needed to come to definite conclusions. The following observations can, however, be made tentatively with regard to the clear cases. If both the CP and the finite verb involve natural processes or verbs of volitional acts, unless the verbs are semantically related in specific ways, the interpretation is that of temporal-sequential action.

39. usne acchii tarah nahaa kar tab roTii khaaii  
 he ag. well bathe CP then bread ate  
 He ate (his) meal after bathing.
40. usne acchii tarah cabaa kar (\*tab) roTii khaaii  
 he ag. well chew CP then bread ate  
 He ate the bread, (\*after) chewing it well.

In sentence 39, nahaa 'bathe' and khaa 'eat' are both volitional acts but not related semantically. In 40, cabaa 'chew' expresses a special action within the domain of the action expressed by khaa 'eat'. The same is true of hāснаа 'laugh' and baat karnaa 'talk' and dauRnaa 'run' and anaa 'come' (i.e., 'talk' is a general verb of communication, 'laugh' expresses a special kind of communication, and so on). Similarly, if the CP expresses a process undergone by an experiencer and the finite verb expresses a volitional act or vice-versa, the combination yields a causal meaning.

41. vah thak kar so gayaa  
 he tire CP sleep went  
 He went to sleep because he was tired.
42. uskii baatē sun kar man uub gayaa  
 his talk listen CP mind bore went  
 I was bored listening to him.

This, however, does not mean that a causal meaning is completely blocked if both the CP and the finite verb are volitional. One example of two volitional verbs yielding a causal reading is as follows.

43. tumhaaraa patra paRh kar vah rone lagii  
 your letter read CP she cry began  
 a. She began to cry after she read your letter.  
 b. She began to cry because she read your letter.

In this context, it may be useful to note the differences between the causal adverbial meaning of the CP construction and the following use of kar.

44. raNaa ne usko zahaR dekar maar Daalaa  
 Rana ag. him poison give CP hit poured  
 Rana killed him by giving him poison.

Here kar seems to function as a 'linker' joining a cause proposition with an effect proposition in the sense of Givón 1974. This is further discussed in Kachru (forthcoming). In this type of 'causative' construction, the main verb (i.e., the finite verb) must be a causative (morphological or lexical) and the object (i.e., the affected) of the main verb must be identical and coreferential with the indirect object (i.e., the recipient) of the participle. If these conditions are not met, no 'causative' reading is possible. For instance, the following do not yield a 'causative' reading.

45. ham usko pakaR kar ghar le aaye  
 we him catch CP home take came  
 a. We caught him and brought him home.  
 b. \*We brought him home by catching him.
46. raaj ne kabuutar ko pakaR kar maar Daalaa  
 Raj ag. pigeon DO catch CP hit poured  
 a. Raj caught the pigeon and killed it.  
 b. \*Raj killed the pigeon by catching it.

In 45 and 46, the affected object of the main verb has identical grammatical function in the subordinate clause as well, hence, the 'causative' meaning is blocked. In 47, again, since the conditions specified above are not met, no causative reading is possible.

47. vah usko paise de kar mar gaa  
 she him money give CP die went  
 a. She died after giving him money.  
 b. \*She died by giving him money.

This discussion, though based on a limited range of data, makes it clear that 'a mostly pragmatic analysis', as suggested in Davison (1981), would ignore the syntactic and semantic generalizations presented above. The following points emerge from the above discussion and illustrations.

One, the surface CP shares a number of properties, both syntactic and semantic, with a number of other constructions in the language, and these could not be accounted for by pragmatic principles alone. Pragmatic principles, however, are necessary to resolve the ambiguity of, say, 33 and 43. Two, the formative kar has at least two meanings: perfective and simultaneous. The simultaneous meaning is involved in the manner adverbial construction, and the perfective in possibly all the other constructions discussed above. Three, in view of the different constraints involved, it is unlikely that a single syntactic source would account for the entire range of the construction. The only alternative is to further investigate the phenomenon and determine if the multiple syntactic sources suggested above can be independently motivated. The two areas that seem promising are the 'causative' and the manner adverbial constructions. In case of the manner adverbial construction, a large number of expressions are well on their way to becoming 'fixed collocations' or 'idioms' in the sense that given a main verb, the CP construction with which it can occur is almost predictable. A number of such expressions is given below.

- |                              |   |
|------------------------------|---|
| 48. phuuT-phuuT kar ronaa    | 'to cry bitterly'   |
| sisak-sisak kar ronaa        | 'to sob' (cry sobbingly)  |
| ho-ho- karke hāsnaa          | 'to laugh with a noise 'ho-ho''   |
| khilkhilaa kar hāsnaa        | 'to laugh'  |
| bhakhakaa kar jalnaa         | 'to burn furiously'   |
| umaR kar chaanaa             | 'to swell and cover' (said of clouds)                                     |
| garaj kar kahnaa             | 'to say roaringly'  |
| dāāt piis kar bolnaa         | 'to speak, gnashing one's teeth'  |
| caaT kar khaanaa             | 'to eat by licking'   |
| gaTgaTaa kar pii jaanaa      | 'to drink by swallowing rapidly'  |
| samhaal kar rakh lenaa       | 'to keep something carefully'<br>(i.e., to preserve, keep something safe) |
| man lagaa kar paRhnaa/sunnaa | 'to read/listen to by applying one's mind to it' (attentively)            |

There is no such development in case of temporal or other uses of the construction. This may be because there are limited choices with regard to the manner in which specific tasks can be said to have been performed, whereas the range of reasons, or causes, or time expressions is much wider. One point, however, seems to be beyond controversy and

that is that the CP construction in Hindi-Urdu will contribute significantly to our understanding of the role of pragmatics in linguistic descriptions.<sup>9</sup>

## NOTES

<sup>1</sup>I am grateful to the Research Board of the Graduate College, University of Illinois for supporting the research reported in this paper, and to Tammie Valentine for assisting me with the collection of data from various sources. An earlier version of this paper was presented at the Third SALA Roundtable at SUNY Stony Brook, on May 1, 1981, under the title 'Toward an Integrated Analysis of Conjunctive Participle in Hindi-Urdu.'

<sup>2</sup>Abbi (1980) suggests this in relation to CP's with causal and manner adverbial meanings.

<sup>3</sup>The CP in the gloss is an abbreviation for conjunctive participle marker.

<sup>4</sup>The reasons for the ungrammaticality of the (a) versions of 5-8 are as follows: in 5a, planting one's feet firmly and walking are semantically contradictory; in 6a, ThaThaanaa is no longer an independent verb in Hindi-Urdu; in 7a-8a, the verbs hāснаa and katraanaa cannot take the complements, sabse and mere saamne se, respectively. In 7b, word-order adjustments yield a grammatical but semantically pointless sentence and in 8b, the first conjoined clause is ungrammatical in that katraanaa is not a deletable object verb. Even repairing that does not lead to a paraphrase of 8: 8d, vah mujhse katraayaa aur (\*tab) mere saamne se nikal gayaa, 'he avoided me and passed in front of me'. 8d is as anomalous semantically as 7b.

<sup>5</sup>This is noted in Pořízka (1967-69), also. Davison (personal communication) suggests that nevertheless, the 'perfective' meaning even in the manner adverbial is justifiable if 'perfective' is interpreted as 'prior with continued relevance'. This may work for sentence (5) but would not work for sentences (6) and (7) and the expressions listed in (48).

<sup>6</sup>For some speakers, 15 and 16 are ambiguous. For example, 15 may mean either 'without eating' or 'instead of eating'. Even these speakers, however, find the following unambiguously antithetical.

- (i) vah duudh na piikar caay piine lagii  
'She started drinking tea instead of drinking milk.'
- (ii) vah ghar kaa kaam na karke saare din ghuumtii rahtii hai  
'She wanders around the whole day instead of doing the housework.'

<sup>7</sup>The -ke is a variant of CP, used obligatorily with the verb kar 'do' and optionally with other verbs.

<sup>8</sup>Note that with hii also, 33 is ambiguous, but that has no bearing on this discussion.

<sup>9</sup>One major work consulted as a source for data on CP is the following: Yaadav, Rajendra. 1951. Saaraa aakaash. New Delhi, India: Akşar Prakashan.

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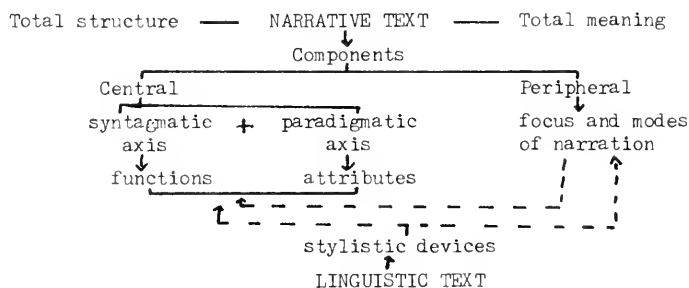
DISCOURSE STRUCTURE IN A HINDI SHORT STORY

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Structural analysis of a Hindi short story is presented in the methodological framework of discourse analysis and the theoretical framework of semiotics. Macro-structural categories of the narrative are described in correlation with the relevant micro-structural categories of the linguistic text of the story as an exercise in total analysis of the narrative art symbol.

1. Introduction

The study presents a discourse analysis of a Hindi short story *Liiciyaã* in terms of structural narratology. A short story is understood as a semiotic literary symbol--a unified object of narrative and linguistic structures on one hand, and artistic and socio-cultural wholes on the other. The theoretical assumption of semiotics provides for a total and comprehensive model of analysis which may be represented as follows:



A narrative text is, from the structuralist point of view, a unity of total structure and total meaning, related respectively to the constitutive and communicative aspects of the text object. The text may be broken down into components falling into two categories--the central and the peripheral. Participants or characters and elements or constituents of plot are the central components which can be seen as arranged at two axes--the syntagmatic and the paradigmatic. The interaction of components at syntagmatic axis is functions. The concept of 'function' is in conformity with the reductionist technique of deriving abstractions which could be related to the specific phenomena occurring in a given text. Modes of narration are the various conventions of presenting the narrative and are related to discourse types in general. These modes feed the central components. The whole complex is anchored in the linguistic text which is related to the narrative text--the central and the peripheral components--through stylistic devices, which are also responsible for giving a touch of individuality to the components and, as such, the narrative text under study.

A few remarks on methodology are necessary.

The study follows structuralist technique of IC analysis which correlates with temporality--the distinctive feature of the narrative structure. The related methodological requirement of the analysis is the derivation of the core structure of the narrative text. The core structure of the narrative text is arrived at in a manner which appears consonant with the simple and organic structural composition of the story as well as the aim of the study. The method employed here assumes that it is neither absolutely necessary nor fully possible to insist on strictly deriving the kernel sentence structure of the entire text by using the methodology rigorously. As our study is applicational, the reduction of the linguistic text of the short story into even 'near-kernel' sentences along with the kernel ones will be sufficient to serve our purpose. Accordingly, the optional elements of the sentence structure have been distinguished from obligatory ones by being enclosed in parentheses in the re-written text (see appendix). This simple technique helps in setting off the stylistically and compositionally relevant linguistic elements of the discourse structure of the short story as distinct from the rest.

As our study aims at presenting discourse analysis of a narrative text, the same is seen here as a many-layered contextualised structure with an artistic intent and a cultural dimension. Accordingly, it is analysed in a hierarchical order of levels of analysis which is consistent with the theoretical assumption.

Metalingual design of the study tries to strike a balance between formulaic and tabular representation of facts of structural organisation of the narrative symbol as usually practised in studies in structural folkloristics, and verbal representation of the aspects of the symbol which merit interpretative comment as is the normal practice in literary studies.

## 2. Analysis

2.1. Context: *Li icīyā* is a story of two married women who are placed in an identical situation at the physical level but show contrast at the psychological level. In terms of theme dynamics, the story begins at the point of identicalness and closes at the point of contrast, running through a course of thematic development which is structurally and functionally responsible for imparting a touch of individuality to the story. The distribution of identicalness and contrast in situations is governed by their correlates--the physical and the psychological respectively.

2.2. Narrative macro-structure: The narrative macro-structure of the story is marked by two inter-related principal super-structure features: (a) it is participant-dominated, (b) it is single-event. It is chiefly a story of network of relations that obtain between Sudhaa and her husband on one side, and Saeedaa and her husband on the other, with their respective servants playing intermediary roles. The ailing women asking their husbands to send lichees is the kernel event which releases a chain of reactions, realising the pattern of structural relationship between Sudhaa and her husband, and Saeedaa and her husband, showing the feature of complementary distribution.

2.2.1. Total structure of the story is realised by the following formula:

LIICIYAA --> + INTRODUCTION + INCITATION + BODY -->  
 +Inter-action 1 + Intra-action + Inter-action 2  
 + CLOSURE

INTRODUCTION --> appearance of participants + identicalness (1)

INCITATION --> appearance of stimulus + identicalness (2)

BODY --> Inter-action 1 -> interdiction/no-directive (3)  
 reinforced through repetition (3.1) +  
 harmony 1

-> prescription/yes-directive (4)  
 reinforced through repetition (4.1) +  
 disharmony 1

Intra-action --> reflection + self-deprecation (5)

Inter-action 2 --> remorseful regard (6) reinforced  
 through repetition (6.1) + harmony 2

-> remorseless disregard (7) +  
 disharmony 2

CLOSURE --> content vs. discontent = contrast (8-9)

Structural details of BODY are considered in the latter section while the rest are taken up first. (Note: numerals and sub-numerals in parentheses in the text of the study correspond to the numbers of the sections and sentences in the text of the story as given in the appendix.)

#### 2.2.1.1. Component: INTRODUCTION (1)

Mode of narration: summary

Function: appearance of participants

Attribute: identicalness

Style markers, thematic reference, and effect:

- (i) aggregative, donō 'both the', appearing in relevant constructions: Sudhaa aur Saeedaa donō 'Sudhaa and Saeedaa both' (1:1), donō ke pati 'husbands of both' (1:2)--reference is obvious- emphasis.
- (ii) temporal adv. phrases, kahi dinō se 'for many days' (1:1), shaam ko nishcit samay par 'at a fixed hour in the evening' (1:2)--reference to the ailing women and their husbands respectively--emotive.

The physically identical situation of Sudhaa and Saeedaa has been stressed by the aggregatives--'both' were lying ill, 'both' were visited by their husbands. The pitiability of their condition--they had been lying ill for many days and were visited by their husbands regularly at a fixed hour is highlighted by the temporal adverbial phrases.

2.2.1.2. Component: INCITATION (2)

Mode of narration: summary

Function: appearance of stimulus

Attribute: identicalness

Style markers, thematic reference, and effect:

- (i) aggregative, donõ 'both the', appearing in relevant constructions: donõ ne 'both' (2:1), donõ puruSo ne 'both men' (2:2)--reference is obvious--emphasis.
- (ii) modifier, ek hii 'the same,' appearing in relevant construction, ek hii dukaan se' from the same shop' (2:2)--reference for the husbands--emphasis.
- (iii) temporal adv. phrase, ghar pahũcte hii 'immediately on reaching home' (2:2a)--reference as above--emotive.

The identicalness of situation of the women is again emphasized through aggregatives. The way their husbands are disposed towards their wives is underlined by the modifier and the temporal adverbial phrase, which bring out markedly the identicalness in their situation.

The aforesaid functional attribute, the identicalness, is further evidenced by the graphonomic fact of singleness of paragraph. Though the participants are two, the description of their condition is handled in a single paragraph.

2.2.1.3. Component: CLOSURE (8-9)

Mode of narration: summary

Function: content vs. discontent

Attribute: contrast

Style markers, thematic reference, and effect:

- (i) idiomatic expression, bhaavnaaõ mẽ agar battiyaã mahak 'incense sticks perfume in feelings--feel cheerful and content' (8:1a)--reference to Sudhaa--emotive.
- (ii) idiomatic expression, bhaavnaaõ mẽ makkhiyaã bhinbhinaa 'flies buzzing in feelings--feel desolate and discontent' (9:1a)--reference to Saeedaa--emotive.

The contrast in the psychological condition of the women is portrayed against the backdrop of identicalness in their physical condition, expressed through near-identical references in the micro-context of the text--Sudhaa akelii thii 'Sudhaa was alone' (8:1a), and, Saeedaa bhii akelii thii 'Saeedaa too was alone' (9:1a). But their psychological conditions differ, and the fact is brought out effectively by the choice of idiomatic expressions distributed appropriately between Sudhaa and Saeedaa. These expressions realise functions of content vs. discontent in relationship of binary opposition. Sudhaa is content with her married life and Saeedaa discontent.

The graphonomic evidence of contrast in psychological conditions of Sudhaa and Saeedaa is provided by the fact that they have been allotted different paragraphs for description of their condition. Paragraph 8 goes to Sudhaa and 9 to Saeedaa. The graphonomic split at the level of this component correlates with the phenomenon of change of functional attributes--from identicalness in INTRODUCTION and INCITATION to contrast in CLOSURE.

2.2.2. The component of BODY is the central component and represents thematic development of the short story. It is identified in terms of three sub-components:

Inter-action 1, Intra-action, Inter-action 2

2.2.2.1. Sub-component: Inter-action 1, part I

Mode of narration: semi-dialogue (Sudhaa to servant)  
 Function: interdiction/no-directive (3), with emphasis (3.1)  
 Attribute: harmony 1  
 Style markers, thematic reference, and effect:

- (i) adversative, the inter-clause connector, par 'but' (3:1)--reference to lichees--extension of incitation.
- (ii) negative imperative, mat kahnaa 'don't tell' (3:3a)--reference to Sudhaa--emotive.
- (iii) adv. phrase of manner, daravaaze ke paas se use bulaa kar 'calling him back from the door' (3.1:1a)--reference to Sudhaa--emphasis.
- (iv) negative imperative, mat bhuulnaa 'don't forget' (3:1:2)--reference to Sudhaa--emotive.
- (v) adjectives used predicatively, dukhii 'sad' (3:4c), pareshaan 'worried' (3.1:3a)--reference to Sudhaa's husband--emotive.

The reference that the lichees looked puffed up and fresh from outside but there were worms inside them is the extension of incitation which triggers off the subsequent components of the text. The function of interdiction is realised by negative imperative 'mat kahnaa,' and the emphasis therein by the adverb of manner and the repetition of the negative 'mat'. This together

with emotive vocabulary items, 'dukhi' and 'pareshaan', appropriately realise the attribute--harmony. Sudhaa and her husband are depicted as showing the relationship of mutual care and trust.

#### 2.2.2.1.1. Sub-component: Inter-action 1, part II

Mode of narration: semi-dialogue (Saeedaa to servant)  
 Function: prescription/yes-directive (4), with emphasis (4.1)  
 Attribute: disharmony 1  
 Style markers, thematic reference, and effect:

- (1) adv. phrases of manner, chilke samet 'alongwith the peel,' rumaal mē baādh kar 'packed in handkerchief' (4:1)--reference to Saeedaa--repulsion.
- (ii) nominal item, imrat phal 'nectar fruit' (4:3)--reference to lichees--sarcasm.
- (iii) verbal item, nosh pharmaaē '(you) taste' (4:3b)--reference to Saeedaa's husband--sarcasm.
- (iv) adv. phrase of manner, darvaaze ke paas se use bulaa kar 'calling him back from the door' (4.1:2)--reference to Saeedaa--emphasis.
- (v) nominal phrase, vilaayatii pleT 'foreign made dish' (4.1:3)--reference to lichees--sarcasm.
- (vi) nominal phrase, bahut zyaadaa viTaamin 'a lot of vitamins' (4.1:3b)--reference to lichees--sarcasm.

The function of prescription is realised through Saeedaa commanding her servant to serve her husband with rotten lichees (4:3,3b), and is stylized by the choice of relevant lexical items in the adverbial phrase of manner 'chilke samet,' etc. The same is reinforced by repetition of instruction realised by repetition of imperatives, denaa 'give' and kahnaa 'say' (4:3, 3a). The style markers occurring in Saeedaa's statements are overwhelmingly of sarcastic flavour, and realise the functional attribute, disharmony--disharmony in relationship between Saeedaa and her husband.

#### 2.2.2.2. Sub-component: Intra-action (5)

Mode of narration: monologue  
 Function: reflection  
 Attribute: self-deprecation  
 Style markers, thematic reference, and effect:

- (i) verbal item baRbaRaa 'grumble' (5:1)--reference to Saeedaa--disaffection.
- (ii) pronominals, kisii kaa 'of one' (5:2)--reference for Saeedaa--kiske 'whose' (5:3)--reference to third person--self-pity.
- (iii) the question word, kyaa 'what' (5:4)--reference to Saeedaa--self-pity.

- (iv) the idiomatic expression, jaan ghol kar pilaa 'be ready to forsake everything in life' (5:6b); apnii apnii kismat 'it is a matter of luck' (5:7)--reference for Saedaa-self-pity.

The component of Intra-action provides a glimpse of working of Saedaa's mind; her pitiable condition, her loneliness which evokes pathetic feelings in the reader's mind, and consequently realises the functional attribute of self-deprecation. The emotive expressions of sentence size-level, listed in the column of style markers, speak of expressiveness of the colloquial variety, and show a kind of convergence on a single stylistic effect, to which contributes the graphonomic feature of singleness of paragraph.

#### 2.2.2.3.1. Sub-component: Inter-action 2, part I

Mode of narration: semi-dialogue (husband to Sudhaa)  
 Function: remorseful regard (6), with emphasis (6.1)  
 Attribute: harmony 2  
 Style markers, thematic reference and effect:

- (i) temporal adv. phrase, samay se kuch pahle 'a little before the fixed hour' (6:1)--reference to Sudhaa's husband--regard.
- (ii) antithesis through personal pronouns, tum: maĩ 'you: I' (6:3,4a)--reference to Sudhaa's husband--remorse.
- (iii) adv. phrase of manner, khud chiil kar 'peeling himself,' apne hii haath se 'with his own hands' (6:5)--reference to Sudhaa's husband--regard.
- (iv) nominal phrase, baRii bhuul 'a blunder' (6:6--reference to Sudhaa's husband--remorse.
- (v) verbal items, koshish karuᅡgaa 'I will try' (6.1:2a); uTh aaũ 'I leave' (6.1:2b); yakiin hai 'I am sure' (6.1:3); aa jaauᅡgaa 'I will return' (6.1:3a)--reference as above--regard.
- (vi) adv. of manner repeated, jaldii 'soon' (6.1:2b,3a) reference as above--regard.

The segment provides an interesting dimension of relationship between Sudhaa and her husband. The husband speaks and wife listens. He is remorseful (6) and full of regard (6.1). His regard towards his wife is pointedly expressed by a chain of adverbs of manner relating to him--'samay se kuch phale hii (aa gaye)'; 'khud chiil kar'; 'apane hii haath se (khilayee).' His feelings for his wife are further expressed through a repetition of the lexical item jaldii 'soon' in his statements (6.1:2b,3a). The component, by virtue of its recurrence, underlines again the functional attribute of harmony between Sudhaa and her husband.

#### 2.2.2.3.2. Sub-component: Inter-action 2, part II (7)

Mode of narration: semi-dialogue (servant to Saedaa)  
 Function: remorseless disregard  
 Attribute: disharmony 2  
 Style markers, thematic reference, and effect:

- (i) temporal adv. phrase, un ke jaane ke kaafii der baad 'long after he (Sudhaa's husband) had left' (7:1)--reference to Saeedaa's servant--disregard.
- (ii) nominal item, saahab 'sir' (7:2) and its coreferential pronoun unhõ ne 'he' (7:3)--reference to Saeedaa's husband--disregard.
- (iii) negative adverb, (viTaamin) nahiĩ 'no (vitamins)' (7:3b)--reference to lichees--sarcasm.
- (iv) nominal phrase, began saahbaa 'the lady' (7:3c)--reference to Saeedaa--sarcasm.
- (v) adv. phrase of manner, bekhatke 'without any hitch' (7:3c)--reference as above--sarcasm.

This segment gives a glimpse of the relationship between Saeedaa and her husband. The servant conveys the message and Saeedaa listens. Saeedaa's husband is far from remorseful and shows scant regard for his wife as is evident from sarcastic references in his message to her. The sub-component, by virtue of its recurrence, underlines again the functional attribute of disharmony between Saeedaa and her husband.

2.2.3. The component of BODY as treated above shows interesting features of thematic structural relationship between its sub-components. The change of functional attribute from identicalness in INTRODUCTION and INCITATION to contrast as culminating in CLOSURE is appropriately processed in BODY through its sub-components. In other words, the attribute of identicalness originates in the first two segments, develops into contrast in the BODY, and comes to a head in CLOSURE. Following observations may be made about the structural relationship of the sub-components with regard to the development of the relevant thematic function.

- (i) Inter-actions 1 and 2 have two parts each, and both of them show the functional attribute of contrast. Sudhaa's conjugal life is marked by harmony and Saeedaa's by disharmony.
- (ii) Parts I and II of Inter-action 1 show similarity in repetition of style markers for emphasis (3.1 and 4.1). However, this similarity is absent in the parts of Interaction 2 (6.1, but there is nothing like 7.1 as its counterpart). This again underlines the attribute of harmony in Sudhaa's conjugal life and disharmony in Saeedaa's.
- (iii) The sub-component of Intra-action is restricted to Saeedaa. Besides being instrumental in transition from Inter-action 1 to Inter-action 2 and thus accounting for cohesiveness of the story in general and BODY in particular, it highlights the state of Saeedaa as a lonely and dejected woman.



- (iv) Part I of Inter-action 2 shows the feature/+husband/, i.e. the husband comes to console Sudhaa; while part II shows the feature/-husband/, i.e. the husband does not come to console Saeedaa. This situation justifies the respective presence and absence of repetitive devices in parts I and II in Inter-action 2, which accounts for psychological proximity and remoteness respectively in the relationship of the couples. The above contrast in the condition of Sudhaa and Saeedaa and the related narrative functions of remorseful regard (6) and remorseless disregard (7) are sequel to those of interdiction or no-directive (3) and prescription or yes-directive (4), which portray the women's attitudes towards their husbands.
- (v) The contrast in their conditions correlates with graphonomic features in an appropriate manner in Inter-action 2. Two paragraphs with larger language content are devoted to part I, while part II is restricted to one paragraph with relatively small language content.

2.3. Modes of narration: The modes of narration have been assigned the status of peripheral component of the narrative text in our scheme. They are related to the central components of the narrative text on one hand and to the stylistic devices in the linguistic text on the other. While they are instrumental in realising the function and the attributes in the narrative segment in consonance with narrative requirements, they are themselves realised through appropriate stylistic devices from linguistic micro-structure of the semiotic symbol, i.e. the short story.

The story has been told in third person mode of narration. The focus is on the author, who is the omniscient, though rather impersonal, narrator. It is neatly distributed between two segments of narration--the scene and the summary. BODY is composed in scene mode and the rest in summary. Scene mode is conversational and is realised through semi-dialogue and monologue. In addition, scene shows expository and reflective features of discourse, while the summary mode shows the narrative and descriptive features. The distribution correlates appropriately with the functions and their attributes as realised in the story.

2.4 Linguistic micro-structure: The treatment of linguistic micro-structure of the story is the analysis of the cotextual and contextual elements of the semiotic symbol that the story is. This treatment has instrumental, rather than terminal, value, which means that the treatment owes its value in its relevance to narrative macro-structural analysis, and is therefore subservient to it.

The treatment falls into two parts: (i) relating to cotextual elements, which account for cohesiveness of the story as a whole; (ii) relating to the contextual elements, which represent selection and innovation of items and patterns of language-use in relation to relevant elements in the macro-structure of the narrative text.

2.4.1 The relevant cotextual elements may be treated under three heads, in accordance with the laws of structural hierarchical order of the levels of

the text, starting from below: (A) Inter-clause connectors (enclosed in parentheses at the end of clauses in the analysed text in the appendix), which are restricted to additive *aur* 'and' and the adversative *par* 'but', while the rest are used for reasons structural rather than semantic. (B) Inter-sentence connectors, falling into the following major categories: (a) anaphoric reference, employed overtly, e.g. *donō ke pati* 'husbands of both' (1:2), *donō puruSō ne* 'both the men' (2:2), *unhē* 'them' (3:2), *unhō ne* 'he' (3:4), etc.; (b) anaphoric reference used covertly, e.g. imperative sentences, *dekh* 'look' (3:3), *le* 'take it' (4:2), *dekho* 'look' (6.1:6); (c) adverbials of various categories, e.g. *phir* 'then' (5:4), *jaane* 'God knows' (5:3), *kal* 'yesterday' (6:6), *aaj* 'today' (6:7), *calte calte* 'while leaving' (6.1:5). (C) Inter-pragraph connectors, which relate directly to the contextual consistency of the text as a whole and fall into two major categories: (a) nominals including proper names, e.g. *Sudhaa*, *Saeedaa*, *naukar* 'servant', *liiciyaā* 'lichees'; (b) adverbial phrases, e.g. *ek din* 'once', *duusre din shaam ko* 'next day in the evening', *naukar ke jaane ke baad* 'after the servant had left,' etc. All these elements occur sentence-initially at the beginning of the paragraph.

2.4.2. The contextual elements of linguistic micro-structure have stylistic significance. They are identified intuitively as standing out in the micro-context of the text and are relatable to the macro-context of the text in the structural framework. It is interesting to note that the identifications correlate in a fairly systematic manner with optional elements of the sentences isolated for determining the basic structure of the sentences of the text (see Introduction).

Another relevant observation is that the overwhelming majority of contextual linguistic elements are modifiers--the modifying structures--either of substantives or verbs, carrying relevant lexical items of stylistic significance. For example, the temporal modifier *samay se kuch pahle* 'a little before the fixed hour' (6:1) is stylistically significant inasmuch as it underscores the psychological closeness between *Sudhaa* and her husband and thereby contributes to the total effect of the story. Similarly, repetition of *jaldii* 'soon' (6.1:2c, 3a), occurring in appropriate grammatical constructions in the statements of *Sudhaa*'s husband, is stylistically significant and can be assigned the same relevance as mentioned above. The column of style markers in the section of analysis of narrative macro-structure lists the contextual linguistic elements.

### 3. The Cultural Dimension

A reference to the cultural dimension of the art object is an integral part of the total analysis in narrative semiotics as presented above. Culturally, the message--the total meaning of the story--is a well known fact of conjugal relationship in Indian society which has been dealt with artistically in the story. The moral is obvious: love begets love; hate begets hate; mutual love and trust make a couple happy while absence of these cause misery and depression.

### 4. Conclusion

The study is presented as an attempt at a discourse structure analysis of an artistic narrative, and is a modest contribution to studies in Hindi semiotics on one hand and the structuralists' efforts of "spanning the gap"

between the narrative macro-structure and the linguistic micro-structure on the other. It lays more emphasis on methodology in comparison to finding something new, if any, in the communicative dimension of the thematic aspect of the story. Consequently, I would like to say that *Liiciyaã* is a homogeneous logical, rhythmical discourse culminating in a message of moral which is of social significance. The above characterization represents the semiotic nature of the study inasmuch as it is couched in terms of the relationship between an artistic whole and a cultural whole.

## NOTES

\*I am thankful to Professor Bal G. Misra who read the draft of the paper closely and gave suggestions.

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## APPENDIX

## (1)

1. Sudhaa aur Saeedaa (donõ) (kaii dinõ se) aspataal mẽ daakhil thiĩ  
Sudhaa and Saeedaa both had been in the hospital for many days.
2. donõ ke pati (shaam ko nishcit samay par) aate the (aur)  
The husbands of both used to visit at a fixed hour in the evening and
- 2a. Khoj-khabar le jaate the  
Inquired of their well-being.

## (2)

1. (ek din) donõ ne apne-apne pati se liiciyaã bhejne ko kahaa  
Once both asked their husbands to send some lichees.
2. donõ puruSõ ne (aspataal se lauTte samay) (ek hii dukaan se)  
liiciyaã khariidiĩ (aur)  
Both of them bought, while coming back from the hospital, some lichees from the same shop, and
- 3a. (ghar pahũcte hii) (apne apne naukar ke haath) (aspataal) bhej diĩ  
Had them sent to the hospital through their servants immediately on reaching home.

## (3)

1. liiciyaā uupar se phuulii-taajii thiī (par)  
The lichees looked puffed up and fresh from outside (but)
- 1a. bhiitar un mē kiiRe the  
There were worms inside them.
2. Sudhaa ne unhē kuuRe kii Tokarii mē phikvaa diyaa (aur)  
Sudhaa had them thrown in the dustbin and
- 2a. naukar se kahaa  
Warned the servant
3. dekh  
look
- 3a. apne baabuji se mat kahanaa (ki)  
Don't tell your master that
- 3b. liiciyō mē kiiRe the  
There were worms in the lichees
4. unhōne kitnii muhabbat se liiciyaā bhejiī (par)  
How affectionately he sent the lichees but
- 4a. sunēge (ki)  
If he learns that
- 4b. māīne liiciyaā nahiī khayīī  
I did not eat the lichees.
- 4c. ve dukhii hōge  
He will feel sorry.

## (3.1)

1. naukar cal paRaa (to)  
When the servant started
- 1a. (daravaaze ke paas se) (use bulaa kar) Sudhaa ne kahaa  
Sudhaa called him back from the door and instructed him.
2. merii baat mat bhuulnaa  
Don't forget what I have said to you.
3. (kahiī) (laaR yaa laaparvaahii mē) agar kuch kah baiThe (aur)  
Lest you should say something in indulgence or carelessness, and
- 3a. ve bekaar pareshaan hō  
He may become worried.

## (4)

1. Saeedaa ne liiciyō ko (chilke samet) (rumaal mē baādh kar)  
naukar ko dete hue kahaa,  
Saeedaa gave to the servant the lichees, packed in handkerchief  
alongwith the peel, and said,

2. le  
Take it.
3. ye(imrat phal) unhẽ (hii) de denaa (aur)  
Give these nectar fruits to him and
- 3a. merii taraf se kahnaa (ki)  
Tell him on my behalf that
- 3b. inhẽ aap hii nosh faramaaẽ  
You taste these for yourself.

(4.1)

1. maukar cal paRaa (to)  
When the servant started
2. (daravaaze ke paas se) (use bulaakar)  
Saeedaa ne hidaayat kii  
Saeedaa called him back from the door and instructed him.
3. (us) (vilaayatii) pleT mẽ (rakh kar) denaa(inhẽ) (aur)  
Serve them on the foreign made dish and
- 3a. kahnaa (ki)  
Tell him that
- 3b. in mẽ (bahut zyaada) viTaamin haĩ  
There are a lot of vitamins in them.

(5)

1. (naukar ke jaane ke baad bhii) Saeedaa baR baRaati rahii  
Even after the servant had left, Saeedaa kept grumbling.
2. dil mẽ kisii kaa khayaal ho (to)  
If he had some feelings for me
- 2a. ciiz dekh kar khariidẽ  
He would buy things with care.
3. (jaane) kis ke sapnõ mẽ Duube Hõge  
God knows whom he has in his heart.
4. (phir) dekhne kii zaruurat bhii kyaa hai  
And then what is the need of caring for somebody.
5. maĩ mar jaauũ (to)  
Even if I die
- 5a. (das dinõ baad) nayii-navõlii le aayẽge  
He will bring a new bride just after, say, ten days

6. Yah to maī hii huū (ki)  
It is only me that
- 6a. zaruurat ho (to)  
If the need be
- 6b. apnii jaan bhii ghol kar pilaane ko taiyaar rahtii huū  
I am always ready to forsake everything in life.
7. sab apnii-apnii kismat hai  
It is a matter of luck
- 7a. aur kyaa  
What else

## (6)

1. (duusare din shaam ko) Sudhaa ke pati (samay se kuch pahle hii)  
aa gaye  
Next day evening, Sudhaa's husband came a little before the fixed  
hour.
2. bole  
He said
3. kal tum liiciyaā na khaa sakiī  
You could not eat lichees yesterday
4. mujhe raat bhar aisaa lagaa (ki)  
I felt the whole night as if
- 4a. (aaj) bhuukhaa (hii) so rahaa huū  
I am sleeping hungry tonight
5. (aur) unhōne ek liicii (khud chiilkar) Sudhaa ko (apne hii haath  
se) khilaayii  
Then he himself peeled a lichee and offered it to Sudhaa with  
his own hands.
6. kal baRii bhuul huii (ki)  
I made a blunder yesterday that
- 6a. maīne liiciyaā khud (dekh kar) na liī  
I did not myself see liches while buying them.
7. aaj phavvaare jaakar laayaa  
I myself brought them today from fountain area
8. (khaas) raambaag kii haī  
These are right from Ram Bagh.

## (6.1)

1. mujhe (ek zaruurii) miitIng mē jaanaa hai  
I have to attend on urgent meeting

2. maĩ jaa rahaa huũ (par)  
I am going but
- 2a. (puurii) koshish karuũgaa (ki)  
I will try my best that
- 2b. (jaldii) uTh aauũ (aur)  
I leave it early and
- 2c. (kuch der) tumhaare paas baiTh sakuũ--  
Be able to sit with you for some time--
- 2d. (kah kar) Sudhaa ke pati cal paRe (par)  
Said Sudhaa's husband and started but
- 2e. (daravaaze se) (phir) lauT aae (aur)  
Came back from the door and
- 2f. bole  
Said
3. mujhe (pakkaa) yakiin hai (ki)  
I am very sure that
- 3a. maĩ (jaldii hii) aa jaauũgaa  
I will come back rather early
4. (phir bhii) maĩ Ram Kumaar ko kahtaa jaauũgaa (ki)  
Even then I will ask Ram Kumar while leaving that
- 4a. vah (turant) tumhaare paas aa jaaye  
He should come to you immediately
5. (calte calte) unhõ ne kahaa  
He said while leaving
6. dekho  
Look
7. dukhii na honaa  
Don't be depressed

## (7)

1. (un ke jaane ke kaafii der baad) Saeedaa kaa naukar (khaana lekar) aayaa  
Long after he had left Saeeda's servant came with the meals
2. Saahab ek zaruurii miiting mẽ gaye haĩ  
Sahab has left for an urgent meeting
3. unhõ ne liiciya bhejii haĩ (aur)  
He has sent some lichees and
- 3a. faramaayaa hai (ki)  
Has conveyed that

3b. in mẽ viTaamin nahii hai (aur)  
There are no vitamins in them and

3c. begam (saahbaa) inhẽ (bekhaTke) khaa saktii hai  
The lady can eat them without any hitch

(8)

1. Sudhaa akelii thii (par)  
Sudhaa was alone but

1a. uskii bhaavnaaõ mẽ (jaane) (kitnii) agarbattiyaã mahak rahiĩ thiĩ  
Hundreds of incense sticks were perfuming in her feelings--  
she was cheerful and content.

(9)

1. Saeedaa bhii akelii thii (par)  
Saeedaa too was alone but

1a. uskii bhaavnaaõ mẽ (jaane) (kitnii) makkhiyaã bhinbhinaa rahiĩ thiĩ  
Hundreds of flies were buzzing in her feelings--she was desolate  
and discontent.



PRONOUNS IN MALAYALAM

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The purpose of this paper is to sketch a theory that will account for the relation between pronouns and their antecedents in Malayalam. In section 1, I shall propose a precedence principle in Malayalam, corresponding to what has been called the principle of noncoreference in English. In section 2, I shall examine the facts of 'strong crossover', and, in section 3, demonstrate how the approach proposed in sections 1 and 2 is superior to the treatment of noncoreference and strong crossover in the Government Binding theory, as developed in Chomsky(1981).

1. The Noncoreference Principle

1.1. The noncoreference principle in English (Lasnik (1976), Chomsky (1980)) is demonstrated by contrasts such as the following:

- (1)a. Oscar thinks he is brilliant.  
b. \*He thinks Oscar is brilliant.  
c. Though he is a fool, Oscar adores Mary.
- (2)a. Oscar loves his mother.  
b. \*He loves Oscar's mother.  
c. His mother loves Oscar.
- (3)a. Near him, Oscar saw a snake.  
b. \*Near Oscar, he saw a snake.

The underlined NP's are intended to refer to the same individual. Thus, (1b), (2b), and (3b) are ungrammatical only if Oscar and he are interpreted to refer to the same person. What prevents Oscar from being the antecedent of the pronoun in these examples is the principle of noncoreference. I shall restate the essential insight behind the various formulations of the noncoreference principle in English as (4). (See Lasnik (1976), Reinhart (1976) and Chomsky (1980).)

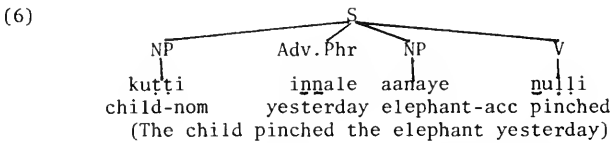
- (4) The Noncoreference Principle  
(English type languages)  
Pronouns cannot c-command their antecedents.

The definition of 'c-command', taken from Reinhart (1976), is as follows:

- (5)  $\alpha$  c-commands  $\beta$  iff the first branching node that dominates  $\alpha$  also dominates  $\beta$ , and  $\alpha$  does not dominate  $\beta$ .

(1b), (2b), and (3b) are ungrammatical because the pronoun c-commands its antecedent in these sentences, violating (4).

1.2. Before we go on to the discussion of the noncoreference principle in Malayalam, it is necessary to outline some of the essential facts of clause structure in the language. Malayalam, like most other languages in India, is a 'nonconfigurational' or 'free word order' language, in which the order of the subject, direct object, indirect object, various adjuncts and the verb is not fixed. What this means is that in Malayalam, grammatical relations such as 'the subject of' and 'the object of' are encoded, not in terms of syntactic configurations, but in terms of morphological case features. I have provided extensive arguments to show that Malayalam does not have a VP node, but has a flat clause structure as illustrated in (6). (Mohan(in press))<sup>1</sup>.



1.3. The most striking fact about pronouns in Malayalam is that they can c-command their antecedents, but not precede them. I formulate the noncoreference principle for Malayalam as (7):

- (7) The Noncoreference Principle  
 (Malayalam type languages)  
 Pronouns cannot precede their antecedents.

I shall use the property of free word order in the language to demonstrate the truth of (7). The following sentences show that all and only those word orders in which the pronoun follows its antecedent are grammatical, whatever be the c-command relation involved:

- (8) a. moohan [awante bhaaṛyaye] nuḷḷi <sup>2</sup>  
 Mohan his wife-a pinched  
 (Mohan pinched his wife.)  
 b. \*awan [moohante bhaṛyaye] nuḷḷi  
 he Mohan-g wife-a pinched
- (9) a. [moohante bhaaṛyaye] awan nuḷḷi  
 Mohan-g wife-a he pinched (=8.a)  
 b. \* [awante bhaaṛyaye] moohan nuḷḷi  
 his wife-a Mohan-n pinched

- (10)a. [moohante bhaaṛya] awane ṇuḷli  
 Mohan-g wife-n hīm pinched  
 (Mohan's wife pinched him)
- b. \* [awante bhaaṛya] moohane ṇuḷli  
 his wife-n Mohan-a pinched
- (11)a. moohane [awante bhaaṛya] ṇuḷli  
 Mohan-a his wife-n pinched (=10.a)
- b. \*awane [moohante bhaaṛya] ṇuḷli  
 hīm Mohan's wife-n pinched

In all these sentences, the version in which the pronoun precedes its antecedent is bad, which follows from (7). In (9.a) and (10.a), the pronoun c-commands its antecedent, which demonstrates that (4) is not applicable in Malayalam:

- (12)a. (=9.a)
- 
- b. (=10.a)
- 

The examples given above illustrate the irrelevance of the notion c-command for pronominal noncoreference in Malayalam. Given below are examples that show that the notion of command is equally irrelevant: even when the pronoun commands its antecedent, the sentence is acceptable, as shown by (13.a):

- (13)a. [kuṭṭi aanaye ṇuḷli eṇṇa] awan paraṅṅū  
 child elephant-a pinched that he said  
 (The child said that he pinched the elephant)
- b. \* [awan aanaye ṇuḷli eṇṇa] kuṭṭi paraṅṅū  
 he elephant-a pinched that child-n said
- (14)a. kuṭṭi paraṅṅū [awan aanaye ṇuḷli eṇṇa] ṇuḷli  
 child-n said he elephant-a pinched that (=13.a)
- b. \*awan paraṅṅū [kuṭṭi aanaye ṇuḷli eṇṇa] ṇuḷli  
 he said child-n elephant-a pinched that

Examples (1.c), (2.c), and (3.a) show that pronouns can precede their antecedents in English; the ungrammatical sentences in (8)-(11) and (13)-(14) show that they cannot do so in Malayalam. Examples (1b), (2.b) and (3.b) show that pronouns cannot c-command their antecedents in English;

(9.a), (10.a) and (13.a) show that they may do so in Malayalam. These facts follow from principles (4) and (7).

## 2. Strong Cross Over

2.1. The principle of strong cross over in English is illustrated by (15) and (16):

- (15)a. Who said he kissed Mary?  
 b. Who said Mary kissed him.  
 c.\* Who did he say Mary kissed?

- (16)a. Everyone said he kissed Mary.  
 b. Everyone said Mary kissed him.  
 c. \*He said everyone kissed Mary.

(15.a) may be paraphrased as, "For which x did x say x kissed Mary?", and (15.b) as, "For which x did x say Mary kissed x?". The meaning of (16.a) is, "For all x, x said x kissed Mary", and (16.b) is, "For all x, x said Mary kissed x". What is interesting for our purposes is the fact that (15.c) and (16.c) do not mean "For which x did x say Mary kissed x", and "For all x, x said x kissed Mary". What blocks these readings is the principle of strong crossover.

I shall assume that strong crossover is a principle that relates pronouns to quantified antecedents (who, which boy, everyone, every boy etc.). Borrowing the essential insight, but not the formulation, from Higginbotham (1980), I shall state the principle as follows:

- (17) Strong Cross Over  
 Quantified antecedents must c-command the pronouns.<sup>3</sup>

I shall also assume, following Reimsjick and Williams (forthcoming) that strong cross over is a principle that applies at the level of 'NP structure', which is a level of representation after NP movement but before wh- movement. The NP structure of (15)a-c is given as (18)a-c respectively:

- (18)a. Who said he kissed Mary.  
 b. Who said Mary kissed him.  
 c. He said Mary kissed who.

The NP structure of (16)a-c, which do not involve wh- movement, is the same as the surface structure. In (18)a and b, who c-commands the pronoun, but in (18)c it doesn't, thereby violating (17). The same explanation holds for (16)c as well.

2.2. Though the principles of noncoreference are different for Malayalam type languages and English type languages, the principle of strong cross over is identical. Consider, for example, the Malayalam sentences that parallel (15):

- (19)a. aaṭṭa parañṅu [meeṛi awane umma weccu eṅṅa ]?<sup>4</sup>  
 who said Mary-n him kiss gave that  
 (Who said Mary kissed him?)
- b. aaṭṭa parañṅu [awan meeṛiye umma weccu eṅṅa ]?  
 who said he Mary-a kiss gave that  
 (Who said he kissed Mary?)
- c.\*[meeṛi aaṛe umma weccu eṅṅa ] awan parañṅu?  
 Mary-n whom kiss gave that he said  
 (Who did he say Mary kissed?)

In (19c), the quantifier does not c-command the pronoun, which is prohibited by the principle of strong crossover. Observe that the pronoun follows the antecedent in (19), and therefore the ungrammaticality of (19c) cannot be explained in terms of the noncoreference principle. The same phenomenon is found in non-wh quantifiers as well:

- (20)a. cilaṭṭa parañṅu [meeṛi awaṛe umma weccu eṅṅa ]  
 some-n Mary-n them  
 (Some said that Mary kissed them)
- b. cilaṭṭa parañṅu [awaṛa meeṛiye umma weccu eṅṅa ]  
 some-n they Mary-a  
 (Some said they kissed Mary)
- c.\*[meeṛi cilaṛe umma weccu eṅṅa ] awaṛ parañṅu  
 Mary-n some-a they  
 (They said Mary kissed some(people))
- (21)a. ellaawaṛum parañṅu [meeṛi awaṛe umma weccu eṅṅa ]  
 all-n Mary-n them  
 (Everyone said Mary kissed him)
- b. ellaawaṛum parañṅu [awaṛa meeṛiye umma weccu eṅṅa ]  
 all-n they Mary-a  
 (Everyone said they kissed Mary)
- c.\*[meeṛi ellaawaṛeyum umma weccu eṅṅa ] awaṛa parañṅu  
 Mary-n all-a they  
 (They said Mary kissed everyone)

It may be noted that in the grammatical sentences cited above, the quantifier c-commands the pronoun. In the ungrammatical sentences, on the other hand, the pronoun c-commands the antecedent asymmetrically. It is legitimate, therefore, to ask why the strong cross over condition should be (17) rather than, say, (22):

- (22) Pronouns cannot c-command quantified antecedents.

Evidence in support of (17) is found in possessive constructions in Malayalam. Recall that both subjects and objects are dominated by the S node in the language. As a result, the possessive inside the subject is c-commanded by the object, and the possessive inside the object is c-commanded by the subject. We get the expected bad results when both the pronoun and the quantified antecedent are possessives, i.e., when neither the pronoun nor its antecedent c-commands the other. Consider the following sentences:

- (23)a. aaṛ [awante bhaaṛyaye] nulli?<sup>4</sup>  
 who his wife-a pinched  
 (Who pinched his wife?)
- b. aaṛe [awante bhaaṛya] nulli?  
 whom his wife-n pinched  
 (Whose wife pinched him?)
- c.\*[aaṛuṭe bhaaṛyaye] awan nulli?  
 whose wife-a he pinched  
 (Whose wife did he pinch?)
- d.\*[aaṛuṭe bhaaṛya] awane nulli?  
 whose wife-n him pinched  
 (Whose wife pinched him?)
- e.\*[aaṛuṭe bhaaṛyaye] [awante amma] nulli?  
 whose wife-a his mother-n pinched  
 (Whose wife did his mother pinch?)
- f.\*[aaṛuṭe bhaaṛya] [awante ammaye] nulli?  
 whose wife-n his mother-a pinch  
 (Whose wife pinched his mother?)

Once again, the same phenomenon is found in non-wh quantifiers:

- (24)a. cilaṛe [awaṛuṭe bhaaṛyamaaṛ] nulli  
 some-a their wives-n pinched  
 (Their wives pinched some people)
- b. cilaṛe [awaṛuṭe bhaaṛyamaaṛe] nulli  
 some-n their wives-a pinched  
 (Some people pinched thier wives)
- c.\*[cilaṛuṭe bhaaṛyamaaṛe] awaṛe nulli  
 some-poss wives-a they-n pinched  
 (They pinched some people's wives)
- d.\*[cilaṛuṭe bhaaṛyamaaṛ] awaṛe nulli  
 some-poss wives-n them pinched  
 (Some people's wives pinched them)
- e.\*[cilaṛuṭe bhaaṛyamaaṛe] [awaṛuṭe ammamaaṛe] nulli  
 some-poss wives-a their mothers-n pinched  
 (Their mothers pinched some people's wives)
- f.\*[cilaṛuṭe bhaaṛyamaaṛ] [awaṛuṭe ammamaaṛe] nulli  
 some-poss wives-n their mothers-a pinched  
 (Some people's wives pinched their mothers)

The reader must have noticed by now an interesting contrast between the facts of strong cross over in Malayalam and English with respect to their subject-object asymmetry. The relevant examples are repeated below:

(25) English

- a. \*His mother pinched everyone.  
 b. \*Who did his mother pinch?

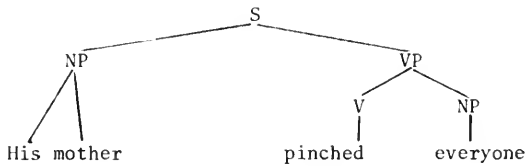
(26) Malayalam

- a. ellaawarey [ awarute ammamaar ] nulli  
 all-a their mothers-n pinched  
 (His mother pinched everyone)  
 b. aare [ awante amma ] nulli?  
 whom his wife-n pinched  
 (Who did his mother pinch?)

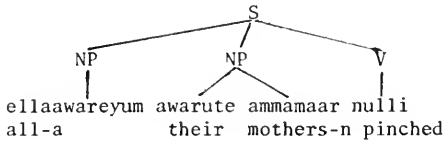
Why are (26)a and b grammatical in Malayalam, while their corresponding sentences in English are ungrammatical?

The answer lies in the difference between the phrase structure configurations in English and Malayalam. (25a) and (26a), for example, have the following structures:

(27)



(28)



Given the fact that subjects and objects c-command each other in Malayalam, but not so in English, the contrast follows from (17): In Malayalam, the object antecedent c-commands the pronoun inside the subject NP, and hence co-reference is possible. In English, the object antecedent does not c-command the pronoun and hence co-reference is disallowed.

### 3. Malayalam Pronouns and the Government Binding Theory

The theoretical interest of pronominal coreference in Malayalam comes from the clear separation of the facts of noncoreference and strong cross over. Chomsky (1981), for example, argues that strong cross over and non-coreference can be accounted for by the following binding condition:

(29) R-expressions are free.

The term 'R-expression' refers to what Chomsky calls 'names' (John, the boy etc.) and 'variables' (traces of wh movement and quantifier raising). 'Free' is 'not bound', where 'bound' is defined as in (30):

(30)  $\alpha$  is bound to  $\beta$  iff  $\alpha$  and  $\beta$  bear the same index and  $\beta$  c-commands  $\alpha$ .

Consider the following ungrammatical sentences:

(31)a.\* He said Mary kissed John  
 b.\*Who<sub>1</sub> did he say Mary kissed t<sub>1</sub>?

In (31a), the R-expression John is bound to (=is c-commanded by the coindexed NP) he, which makes it ungrammatical according to (29). In (31b) by choosing who as the antecedent of the pronoun, the pronoun and the wh-trace become coindexed, thereby creating an illformed structure identical to that of (31a). Thus, both (31a) and (31b) are claimed to be accounted for by the same binding condition.

The two principles that are collapsed in (28) by grouping 'names' and 'variables' as 'R-expressions' can be stated as follows:

(32)a. Names cannot be c-commanded by coindexed elements.  
 b. Variables cannot be c-commanded by coindexed elements.

I have shown that pronouns can c-coccommand their antecedents in Malayalam, violating (32a)(see (12)a,b). Similar facts are observed in languages like Chinese and Japanese as well<sup>5</sup>. Therefore (32a) cannot be a universal principle of grammar that applies to all languages.

Another conclusion that must be drawn from the Malayalam facts is that the principle governing strong cross over and noncoreference cannot be collapsed together as a single principle, as (29) does. In English, the latter is "Pronouns cannot c-command their antecedents", and in Malayalam, "Pronouns cannot precede their antecedents". Yet, the two languages have the same principle of strong cross over: "Quantified antecedents must c-command pronouns". The subpart of (29), stated as (32b), does not account for the Malayalam facts.

#### NOTES

1. One of the arguments against the VP node is that only those constituents which are directly dominated by the S node (in (6)) (i.e. the order free constituents) can be clefted. The correlation between clefting and scrambling is obscured by the VP analysis. Further, if we adopt the flat structure, the structures which generate the cleft sentences are independently required by the grammar, while the VP hypothesis forces us to invent special ad hoc rules for these structures.

2. n = nominative; a = accusative; g = genitive.



3. The terminology of 'cross over' is derived from the transformational account of the phenomena which involved the 'crossing' of a wh phrase across a coreferential NP (cf. Postal (1971)). Such a formulation is clearly inadequate, as (a) the phenomenon of cross over is found in non-wh quantifiers such as every and some, and (b) languages without wh movement (e.g. Chinese and Malayalam) also exhibit the phenomenon (see Higginbotham (1980)). The formulation in (17) says nothing about wh movement, and covers all the cases which the transformational account does not cover.

4. These questions are slightly odd, since the preferred ones in Malayalam are clefted questions:

- (i) aaṛaanaṅ [paraṅṅaṭṭaṅ [meeṛi awane umma weccu eṅṅa ]?]  
 (ii) aaṛaanaṅ paraṅṅaṭṭaṅ [ awan meeṛiye umma weccu eṅṅa ]?  
 (iii) \* [meeṛi aaṛe umma weccu eṅṅa]aṅṅa awan paraṅṅaṭṭaṅ

Malayalam has no wh movement. Hence the NP structure in the language is the same as the surface structure.

5. As in the case of (19), the preferred questions involve clefting.

6. See Mohanan (1981) for a discussion.

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INTERFACE OF LEXICON AND GRAMMAR:  
SOME PROBLEMS IN HINDI GRAMMAR

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The major goals of this paper are the following: (a) to discuss three topics in Hindi grammar, i.e., the possessive postpositions, the progressive construction, and the syntactic process of raising, and to show that the descriptions of the above given in the grammars (pedagogical and others) are inadequate to account for the data; (b) to argue that a pragmatically oriented analysis is essential to correctly account for the data; and finally (c) to discuss the empirical as well as the theoretical implications of the above proposal.

0. Introduction. It has been argued variously that linguistic forms are related to extralinguistic settings (Donnellan 1978, Givón 1978, Green 1975, Morgan 1978, etc.). Also, it is shown that native speakers' competence includes knowledge of the correspondence of linguistic facts to contexts. Thus, pragmatics is considered to be an essential component of language analysis. The major goals of this paper are the following: (a) to discuss three topics in Hindi grammar, i.e., the possessive postpositions, the progressive construction, and the syntactic process of raising, and to show that the descriptions of the above given in the grammars (pedagogical and others) are inadequate to account for the data; (b) to argue that a pragmatically oriented analysis is essential to correctly account for the data; and finally (c) to discuss the implications of the above proposal.

1.0. Possessive postpositions. In Hindi there are five postpositions used to express the relationship between the possessor and the possession. These postpositions are as follows: kā, ke, kī (genitive postpositions), ke (invariable genitive postposition), ko (directional postposition), mē (locational postposition), and ke pās (locational postposition).<sup>1</sup>

What Kachru (1970) pointed out eleven years ago is still true today, "In the existing grammars and pedagogical works on Hindi-Urdu the category of possessive postpositions has mainly been described on the analogy of the possessive in English." For example, it is pointed out in Fairbanks and Misra 1966, and McGregor 1972, that while English uses one and the same construction in the following sentences, different postpositions are used in their Hindi counterparts. Consider the following examples.

1. jān ke / kī tīn beṭiyā hē  
John poss. three daughters are  
John has three daughters.
2. jān ke pās ek kitāb hē  
John poss. one book is  
John has a book.
3. jān ko buxār hē  
John poss. fever is  
John has a fever.
4. jān mē bahut dhēry hē  
John poss. a lot patience is  
John has a lot of patience.

Notice that different postpositions are used in (1)-(4).

The above postpositions are generally divided into two groups, i.e., ke/kā, ke, kī and ke pās belong to one group while ko and mē belong to another. This division is based on the general observation that ke/kā, ke, kī and ke pās are used when the possessor is animate and the possession is either animate or inanimate. In this case, the possession is generally (-abstract).<sup>2</sup> In contrast to this, ko and mē are used when the possessor is animate while the possession is abstract, such as headache, fever, courage, etc. However, it is not clear what exactly the conditions are which determine the choice of one postposition as opposed to the other(s) within the same group.

In the following discussion I will present the data, discuss inadequacies of the hypotheses proposed so far, and finally point out that a pragmatically-oriented hypothesis is essential to account for the data.

1.1. ke/kā, ke, kī and ke pās. First, let us consider the group which contains ke/kā, ke, kī and ke pās. Consider examples (5)-(13). Notice that (5)-(7) allow only ke/kā, ke, and kī. Thus, ke pās is blocked in (5)-(7). In contrast to this, ke/kā, ke, and kī are blocked in (8) and (9) where ke pās is used obligatorily. Also notice that both ke/kā, ke, kī and ke pās are allowed in (10)-(13).

5.  $\left\{ \begin{array}{l} \text{ke/kā} \\ *ke\ pās \end{array} \right\}$  ek beṭā h̄  
 John poss. one son is  
 John has a son.
6.  $\left\{ \begin{array}{l} \text{mere} \\ *mere\ pās \end{array} \right\}$  do bhāī h̄  
 I-poss. two brothers are  
 I have two brothers.
7.  $\left\{ \begin{array}{l} \text{un ke} \\ *un\ ke\ pās \end{array} \right\}$  kaī dost h̄  
 they-poss. many friends are  
 They have many friends.
8.  $\left\{ \begin{array}{l} \text{mere\ pās} \\ *merī \end{array} \right\}$  ek kitāb h̄  
 I-poss. one book is  
 I have a book.
9. bacce  $\left\{ \begin{array}{l} \text{ke\ pās} \\ *ke/kā \end{array} \right\}$  ek lālīpāp h̄  
 child poss. one lollipop is  
 The child has a lollipop.
10. un  $\left\{ \begin{array}{l} \text{ke\ pās} \\ kī \end{array} \right\}$  ek kapṛe kī dukān h̄  
 they-poss. one clothes of store is  
 They have a clothing store.
11. jān  $\left\{ \begin{array}{l} \text{ke\ pās} \\ kī \end{array} \right\}$  baṛī  $\left\{ \begin{array}{l} \text{moṭar} \\ kār \end{array} \right\}$  h̄  
 John poss. big car is  
 John has a big car.
12. ājkal  $\left\{ \begin{array}{l} \text{unke\ pās} \\ unke \end{array} \right\}$  do  $\left\{ \begin{array}{l} \text{sekretarī} \\ nṛkar \end{array} \right\}$  h̄  
 nowadays they-poss. two {secretaries} are  
 {servants}  
 Nowa days they have two {secretaries.}  
 {servants.}

Several attempts have been made to predict the distribution of the above postpositions. McGregor (1972:52) suggests, "What is denoted by the use of kā is a permanent, characteristic or non-fortuitous type of relationship by contrast with the more 'contingent' possession expressed by the use of ke pās." This analysis accounts for the

sentences (5)-(9). However, it does not explain mutual interchangeability of the postpositions in (10)-(12). According to McGregor's hypothesis, a sentence such as (12) with kā expresses a permanent relationship between the possessor and the possession, e.g., servant, etc., while (12) with ke pās expresses a 'contingent' type of a relationship. However, a close examination of the Hindi data shows that it is not the case. Consider examples (13) and (14).

- (13) un ke do ,nōkar the jo unke ghar mē do dīn  
 they-poss. two servants were who their house in two days  
 se zyādā na rah sake  
 more than neg. stay could  
 They had two servants who could not stay in their house for  
 more than two days.
- (14) un ke pās ek nōkar thā jo zindgī bhar unke sāth rahā  
 they-poss. one servant was who life entire them with stayed.  
 They had a servant who stayed with them all (his) life.

In (13) the postposition ke is used and it is explicitly mentioned that the relationship between the possessor ve 'they' and the possession nōkar 'servants' is not permanent. Also, notice that (13) does not present any contradiction. In contrast to this, consider (14) where ke pās is used and it is explicitly mentioned that the relationship between the possessor and the possession was permanent and yet (14) does not present any contradiction. If McGregor's hypothesis was correct, then, we expect both (13) and (14) to present contradictions.

Another hypothesis is presented in Kachru (1970). It is claimed that the apparatus of the inherent features of nouns provided by the transformational theory (Chomsky 1965) accurately predicts the distribution of the postpositions with the help of spelling rules. Thus in her hypothesis the choice of ke versus ke pās is determined on the basis of the following features (Kachru 1970).

Possessor Noun	Possessed Noun	Postposition
15. [+Animate]	a. { { -Animate } { -Abstract } { parts of body } } b. [+Animate]	ke
16. a. [+Animate]	a. { { -Animate } { -Abstract } }	ke pās
b. [+Human]	b. { { +Human } { -Status } }	ke pās

The above feature-system faces the following problems: (a) (15b) predicts that if both the possessor and the possession are animate, then ke is used obligatorily. Within this framework, the possessor-noun will obligatorily take the postpositions ke/kā, ke, kī if the possessed noun stands for pets such as cats, dogs, etc. This hypothesis blocks the use of ke pās in such cases. However, example (13) shows that ke pās can be used in the cases such as (15b). (b) This system does not allow the use of ke or kā, ke, kī if the possessed noun as the features such as  $\begin{bmatrix} +\text{Human} \\ -\text{Status} \end{bmatrix}$  (recall (16b)). However, example (12) shows that ke/kā, ke, kī are not blocked in such cases.

1.2. Semantics: Pragmatics. Another possible hypothesis is as follows: both ke/kā, ke, kī and ke pās express a possessor-possessed type of a relationship. However, they are not semantically identical to each other. While ke indicates emotional closeness/intimacy in the relationship between the possessor and the possessed, ke pās does not indicate any such relationship, but rather, it indicates owner-owned type of a relationship.

This hypothesis predicts the use of ke/kā, ke, kī in sentences such as (5), (6), and (7), where intimate relationships such as parent-child, brother-sister, friend are expressed. In contrast to this, the use of ke pās in (8) and (9) is also expected since the owner-owned type of a relationship is expressed in (8) and (9). However, the choice of the above postpositions cannot be determined purely in terms of their semantics. Were it so, then every sentence with ke would express intimate relationships while every sentence with ke pās would express owner-owned types of a relationship. Thus within this hypothesis ke and ke pās would never be used interchangeably. This hypothesis fails to account for (11)-(13). Moreover, the emotional closeness versus distance expressed by ke/kā, ke, kī and ke pās cannot be attributed purely to the semantics of the above postpositions. If it is not possible pragmatically to derive the above-mentioned meanings then the postpositions merely express the possessor-possessed type of a relationship. Consider the following example.

Suppose the context for (11) is as follows: A police officer is being told by his officer that a thief called John who they are looking for, has a big car. In this case, the officer is merely reporting the fact that John has a big car (recall (11)). In this context, (11) with kī does not indicate that John has an emotional attachment for his car. Thus a sentence such as (11), i.e., jān kī barī {moṭar} hē  
(car) 'John has a big car.', indicates only the possessor-possessed type of relationship.

Similarly, if it is pragmatically impossible to interpret the owner-owned type of a relationship, then, ke pās merely indicated possessor-possessed type of a relationship. Consider the following situation: If a police officer is making an announcement about a car-thief called

John, and if he utters sentence (11), i.e.,  $\underline{jān\ ke\ pās\ barī} \left\{ \begin{matrix} moṭar \\ kār \end{matrix} \right\} hē$  'John has a big car.', then (11) even with  $\underline{ke\ pās}$ , does not indicate that John owns a big car, but rather, it only indicates that John has a big car in his possession.

The discussion so far indicates that the choice of the postpositions cannot be determined purely in terms of their semantics since they fail to express the same meaning in all the contexts.

If the pragmatic factors are taken into consideration, the above hypothesis correctly predicts the distribution of the postpositions as follows: (a)  $\underline{ke/kā}$ ,  $\underline{ke}$ ,  $\underline{kī}$  and  $\underline{ke\ pās}$  are used mutually exclusively in (5)-(9) since certain relationships such as in (5)-(7), are conventionally considered to be intimate while certain others, e.g., (8) and (9) are conventionally considered to be owner-owned types of relationships. Therefore, while  $\underline{ke}$  is obligatorily used in (5)-(7),  $\underline{ke\ pās}$  is obligatorily used in (8) and (9). (b) In such cases where the relationship is not conventionally determined, the choice of the postpositions is determined by speaker's intention to indicate a particular type of a relationship. Consider the following examples.

17.  $\left\{ \begin{matrix} mere \\ *mere\ pās \end{matrix} \right\} \underline{ātmiy}\ \underline{koī\ nahī}\ hē... \left\{ \begin{matrix} mere \\ *merī \end{matrix} \right\} \underline{pās}\ \underline{ortē}\ \underline{kāī}\ hē$   
 I-poss. intimate any neg. is ... I-poss. women many are  
 I do not have anyone (intimate to me)...I have a lot of women.  
 [Novel:  $\underline{bāt\ ek\ ʒrat\ kī}$  "A Woman's Story", written by Krishnā Agnihotri 1974, p. 182, 183]

The context of the above sentence is as follows: A man is talking to his friend. He is telling her that he has a lot of women as friends but he is not emotionally attached to anyone.

In this sentence (17),  $\underline{ke\ pās}$  is blocked when an intimate relationship is intended while  $\underline{kī}$  is blocked when the speaker's intention is to indicate that the relationship is not intimate.

Now consider the following example, (18). In this sentence the speaker wants to convey his intimate feelings to the hearer. In this case the use of  $\underline{ke\ pās}$  is totally blocked.

- (18)  $\left\{ \begin{matrix} merā \\ *mere\ pās \end{matrix} \right\} \underline{to}\ \underline{is}\ \underline{sansār\ mē}\ \underline{tumhāre}\ \underline{sivāy}\ \underline{koī}\ \underline{nahī}$   
 I-poss. really this world in you except for anyone neg.  
 Except for you, I have indeed no one (intimate to me) in this world. [Novel:  $\underline{Loī\ kā\ tanā}$  'Loi's woof', written by Rāngeya Rāghav 1970, p. 26]

(c) If the speaker is not aware of the nature of the relationship between the possessor and the possessed, or if the nature of the relationship is not important to him, then he can use  $\underline{ke\ pās}$  and  $\underline{ke/kā}$ ,



ke, kī interchangeably. This explains the interchangeability of the postpositions in (12) and (13).

2.0 ko vs. mē. Now I will discuss the other set of postpositions and point out the conditions which determine the choice of one as opposed to the other. First, let us consider the data where ko and mē occur in Hindi.

- (19) us  $\left\{ \begin{array}{l} \text{ko} \\ *m\bar{e} \end{array} \right\}$  khuṣī hε  
 he-poss. happiness is  
 He is happy (literally, he has happiness).
- (20) us  $\left\{ \begin{array}{l} \text{ko} \\ *m\bar{e} \end{array} \right\}$  prasannatā hε  
 he-poss. cheerfulness is  
 He is cheerful (literally, he has cheerfulness).
- (21) us  $\left\{ \begin{array}{l} \text{ko} \\ *m\bar{e} \end{array} \right\}$  buxār hε  
 he-poss. fever is  
 He has a fever.
- (22) us  $\left\{ \begin{array}{l} \text{ko} \\ *m\bar{e} \end{array} \right\}$  cintā hε  
 he-poss. worry is  
 He has a worry.
- (22a) us  $\left\{ \begin{array}{l} \text{ko} \\ *m\bar{e} \end{array} \right\} \left\{ \begin{array}{l} \text{muṣkil} \\ \text{dikkat} \end{array} \right\}$  hε  
 he-poss. difficulty is  
 He has a difficulty.
- (23) us  $\left\{ \begin{array}{l} m\bar{e} \\ *ko \end{array} \right\}$  bahut śakti hε  
 he-poss. alot strength is  
 He has a lot of strength.
- (24) us  $\left\{ \begin{array}{l} m\bar{e} \\ *ko \end{array} \right\}$  cālākī khūb hε  
 he-poss. cleverness a lot is  
 He is very clever (literally, he has a lot of cleverness).
- (25) us  $\left\{ \begin{array}{l} m\bar{e} \\ *ko \end{array} \right\}$  cancalatā hε  
 he-poss. unsteadiness is  
 He is unsteady (literally, he has unsteadiness).

- (26) us { mē } dayā h̄f  
 { \*ko }  
 he-poss. kindness is  
 He is kind (literally, he has kindness).
- (27) us { mē } himmat h̄g  
 { ko }  
 he-poss. courage is  
 He has courage.
- (28) us { mē } dh̄ry h̄f  
 { ko }  
 he-poss. patience is  
 He has patience.

Notice that in (19)-(22) ko is used obligatorily and mē is totally blocked. While in (23)-(25) mē is used obligatorily and ko is blocked. While in (27) and (28) mē and ko can be used interchangeably.

2.1. Hypotheses. Kachru (1970) proposed a feature system and additional rules for the distribution of ko and mē.

(29) Possessor Noun	Possessed Noun	Postposition
[+Human]	[+Abstract]	ko/mē

According to Kachru (1970) ko occurs if the possessed noun belongs to the sub-class of abstract nouns which denote sensations such as 'pleasure', 'pain', etc., mē occurs when the possessed noun denotes states such as 'enthusiasm', etc.

Notice that (22a) with ko does not denote any sensation. Similarly (24) with mē does not denote any state. Also, this hypothesis does not explain mutual interchangeability of ko and mē in (27) and (28).

The above data can be handled in a straight-forward fashion within the following hypothesis. Ko denotes abstract possessions which are temporarily possessed by the possessor. Those abstract possessions can be temporary physical mental states, such as khuṣi 'happiness', buxār 'fever', etc., or possessions such as muṣkil 'difficulty', etrāz 'objection', etc. Those possessions are temporary in the sense that they are not permanent characteristics of the possessor's physical or mental disposition.<sup>3</sup> In contrast to this, mē denotes permanent qualities/characteristics which are part of the physical or mental disposition of the possessor. Recall examples (19)-(22) where temporary physical/psychological states such as khuṣi 'happiness'(19), buxār 'fever' (21), etc. are expressed and ko is obligatorily used. On the other hand, in (23)-(25) permanent qualities such as cālākī 'cleverness' (24), dayā 'kindness' (26), are denoted and mē is obligatorily used.

2.2 Evidence. The above hypothesis is further supported by the fact that if it is explicitly mentioned that the possession, namely the physical/psychological state is not part of the disposition of the possessor, then a sentence with ko (30) is fine. However, a sentence with mē (31) presents contradiction. Consider examples (30) and (31).

(30) us ko āj khuṣī hṛ par khuṣī uske svabhāv kā  
 he-poss. today happiness is but happiness his disposition of  
 dharm nahī hṛ  
 characteristic neg. is  
 Today he is happy (literally, today he has happiness) but happiness is not a characteristic of his disposition.

(31) ???us mē āj cālākī hṛ par cālākī uske svabhāv  
 he-poss. today cleverness is but cleverness his disposition  
 kā dharm nahī hṛ  
 of characteristic neg. is  
 He is clever today (literally, he has cleverness today) but cleverness is not a characteristic of his disposition.

2.3 Pragmatics. Although the above evidence shows that ko and mē are semantically similar to each other, the choice of one as against the other is not determined totally on the basis of their semantics. Were it so, then, sentences such as (27) and (28) where ko and mē can be used interchangeably can never occur in the language.

A close examination of the data shows that a number of pragmatic factors play a role in determining the choice of postpositions. Consider the following few cases: (a) If a speaker does not know whether or not a particular quality/state is part of a possessor's disposition, then he can use ko and mē interchangeably, (recall examples (27) and (28)). (b) When a speaker is specifically referring to a state/quality as being a permanent characteristic of possessor's disposition, then only mē is allowed and ko is blocked. Consider the following example (32).

(32) yah koī āścary kī bāt nahī kī usne yah sankat  
 this any surprise of matter neg. that he-Ag this disaster  
 dhṛy ke sāth jhelā. mē usko bacpan se jāntī hū  
 patience with survived. I him childhood since know aus.  
 us {mē } dhṛy bahut hṛ  
 { \*ko }  
 he-poss. patience a lot is  
 It is not a matter of surprise that he survived this disaster with patience. I know him since he was a child. He has a lot of patience.

The discussion in this section shows that the choice of ko vs. mē is not determined purely in terms of their semantics, but rather, pragmatic factors such as speaker's knowledge/intentions play a role in determining their choice.

3.0. The progressive construction. The progressive construction in Hindi is illustrated in the following sentences. Consider examples (33) and (34).

- (33) jān kitāb paṛh rahā hē  
 John book read prog. is  
 John is reading the book.
- (34) jān ghar jā rahā hē  
 John home go prog. is  
 John is going home.

The analyses of the above syntactic construction presented so far (Kachru 1966, McGregor 1972, Vajpeyi 1959, etc.) are not satisfactory since they fail to explain why certain verbs in Hindi fail to participate in this construction. It is observed that verbs, such as, bēthnā 'to sit', pakārnā 'to hold', and marnā 'to die', fail to participate in this construction. Consider the following examples (35)-(37).

- (35) \*vah kursī par bēth rahī hē  
 she chair on sit prog. is  
 She is sitting on the chair.
- (36) \*vah hāth mē kitāb pakar rahā hē  
 he hands in book hold prog. is  
 He is holding the book in his hand.
- (37) \*merā dost mar rahā hē  
 my friend die prog. is  
 My friend is dying. 4

In the following discussion I shall attempt to define the conditions which determine whether or not a verb will participate in a progressive construction.

3.1. Hypothesis. First, I will describe the semantic function of the progressive construction in Hindi; second, it will be pointed out that certain verbs fail to carry out this function and thereby fail to participate in the construction; third, it will be demonstrated with illustrations that the participation/non-participation of the verbs in the progressive construction is not determined purely in terms

of their semantics but rather, the context in which the verb is used, also plays an important role.

A close examination of the Hindi data shows that a verb in the progressive construction expresses progression of an act or a process or a state, such as sleep, etc. Thus, (33) expresses the action of reading the book in progress, while a sentence, such as (38) expresses continuation of the state of sleep. Consider (38).

- (38) *baccā so rahā hē*  
 child sleep prog. is  
 The child is sleeping/asleep.

A sentence in progressive construction expresses futurity also. For example, (33) and (34) ambiguously express the meaning "He is going to read the book." and "John is going to go home.", respectively.

If the above analysis of the function of the progressive construction is correct, then we can formulate the following hypothesis: A verb participates in the progressive construction if the act or process expressed by the verb is gradual. In other words, a verb participates in the progressive construction if the progression of the act is gradual from the point of its beginning to its completion. Thus, the verbs such as, *parhṇā* 'to read', *likhṇā* 'to write', *jīnā* 'to live', which express gradual progression of the act/process readily participate in the progressive construction. However, the punctual verbs<sup>5</sup> such as *bithṇā* 'to sit down', *uthṇā* 'to get up', *marnā* 'to die', *ruknā* 'to stop', *cup honā* 'to become quiet', and *ṭūṭnā* 'to be broken' express processes which are abrupt and not at all gradual. In other words, their progression from the starting point to the end is abrupt. Therefore, those verbs do not participate in the progressive construction in Hindi (recall examples (35)-(37)). Sentences in progressive construction with the punctual verbs are grammatical only if they are interpreted as expressing futurity. Consider examples (39)-(41).

- (39) *vah vahā ruk rahā hē*  
 he there stop prog. is  
 He {will stop there.  
 {is going to stop there.}
- (40) *vah mar rahā hē*  
 he die prog. is  
 He {will die soon.  
 {is going to die soon.}
- (41) *vah bēṭh rahā hē*  
 he sit down prog. is  
 He {will sit down.  
 {will be sitting down.}

In contrast to the above, in English, punctual verbs when used in the progressive construction, express the resulting state of the act/process. Thus, a sentence such as, "She is sitting" means "She is in the state of sitting", i.e., "She is seated". However, the punctual verbs in Hindi do not express the resulting state of the act/process expressed by the verb. Therefore, (35)-(37) are not semantically similar to their respective counterparts in English.

3.3. Pragmatics. An investigation of the data shows that whether or not a verb will participate in the progressive construction cannot be determined purely in terms of the semantics of the construction or of the verbs. The context in which the verb is used plays an important role in this decision. Consider the following examples (42) and (43) where the same verb rukṅā 'to stop' is used. Notice that when it is used with reference to a man, (42) is not good, while when used with reference to a train (43) is fine. This is due to the fact that pragmatically rukṅā 'to stop' expresses an abrupt action if it is carried out by a man, while it expresses a gradual action if it is carried out by a train.

(42). ???ādmī ruk rahā hē  
 man stop prog. is  
 The man is stopping.

(43) ṭren ruk rahī hē  
 train stop prog. is  
 The train is stopping.

Similarly, the action of falling is abrupt in the context of a child (44) while it is gradual in the context of a balloon (45). Notice that while (44) is ungrammatical (45) is fine.

(44) \*mē ne dekhā baccā zamīn par gir rahā thā  
 I Ag. saw child floor on fall prog. was  
 I saw the child falling on the floor.

(45) mē ne dekhā gubbarā havāī jahāz se gir rahā thā  
 I ag. saw balloon airplane from fall prog. was  
 I saw the balloon falling down from the

3.4. Punctual verbs and repetitive actions. In addition to the above discussion, one more fact needs to be mentioned in this context. In Hindi, if a verb expresses an abrupt action but the action is performed repeatedly (without any interval), then the verb can participate in the construction. In this case, the native speakers interpret the repetition of such an action as the continuation of that action. Consider the following example.

- (46) vah uchal rahā h̄  
 he jump prog. is  
 He is jumping.

In (46), the verb uchalnā 'to jump' expresses that the act of jumping is performed repeatedly. Similarly, (44) is alright if it means 'the child is repeatedly falling down on the floor'. However, notice that the actions expressed by the verbs b̄ṭhnā 'to sit down' (35), pakarnā 'to hold' (36), marnā 'to die' (37), do not express repeated action. Therefore, the verbs in (35)-(37) fail to participate in the progressive construction.

4.0. Raising. In this section I will discuss the role of pragmatics in determining whether or not the syntactic process of raising applies to a sentence. In particular, I will discuss the process of B-raising in Hindi, wherein the subject of the lower clause is made direct object of the higher clause/main clause. The verb in the lower clause is transformed into a participle. This process is already discussed in Kachru (1966) and Subbarao (1974). This process is exemplified in the following sentences.

- (47) mē ne dekhā ki laṛkā kitāb paṛh rahā h̄  
 I Ag. saw that boy book read prog. is  
 I saw that the boy was reading a book.
- (48) mē ne laṛke ko kitāb paṛhte hue dekhā  
 I Ag. boy obj. book reading saw  
 I saw the boy reading the book.

Notice that (48) is the raised counterpart of (47). The subject of the lower clause, i.e., laṛkā 'boy' in (47) is the direct object of the higher clause in (48), while the verb paṛh rahā 'read + prog.' in (47) is transformed into the participle paṛhte hue 'reading' in (48).

The above transformational rule is discussed in detailed accounts presented in Akmajian and Heny (1975), Bach (1974), and Rosenbaum (1967). It was pointed out (Postal 1973:363-74) that the relationship between the sentences such as (47) and (48) is not purely syntactic. A close examination of the Hindi data shows that the conditions which determine whether or not the rule will apply, do not purely depend on the syntactic structure of the sentence. Consider the following sentences where the rule of raising fails to apply.

- (49)  $m\bar{e}$  ne dekhā ki baccō ne khānā khāyā  
 I Ag. saw that children Ag. meal ate  
 I saw that the children had a meal.
- (49a) \* $m\bar{e}$  ne baccō ko khānā khāe hue dekhā  
 I Ag. children-obj. meal having eaten saw  
 I saw the children having eaten the meal.
- (50)  $m\bar{e}$  ne dekhā ki usko sardard ho rahā h̄  
 I Ag. saw that he-dat. headache happening aux.  
 I saw that he was having a headache.
- (50a) \* $m\bar{e}$  ne usko sardard hote hue dekhā  
 I Ag. he-dat. headache happening saw  
 I saw him (in the state of) having a headache.

The failure of (49) and (50) to undergo raising is explainable on the basis of the following: Kachru, et.al. (1976), pointed out that a sentence with an oblique subject (subject followed by a postposition) fails to undergo participialization. Since the subject in (50) is oblique, it is only as expected that (50) does not undergo the process of participialization. Also, it is argued in Pandharipande and Kachru (1977) that a perfective participle does not refer to the subject if the subject of the verb is not in the resulting state of the act expressed by the verb.<sup>6</sup> Thus, in (49), the participle khāe hue 'eaten' does not refer to the subject bacce 'children' because the subject bacce 'children' cannot be said to be in the resulting state of the action of eating.

4.1. More exceptions. There are a number of sentences however, which fail to undergo raising even though they do not fall into either of the categories mentioned above. In this section I will examine those sentences and determine the conditions which block the operation of the rule of raising on those sentences. Those sentences are the following.

- (51)  $m\bar{e}$  ne dekhā ki andherā ghir rahā h̄  
 I Ag. saw that darkness surrounding aux.  
 (a) I saw that darkness was surrounding.  
 (b) I saw that the night was setting in.
- (52)  $m\bar{e}$  ne {andhere}ko ghirte hue dekhā  
           {andherā}  
 I Ag. darkness surrounding saw  
 (a) I saw the darkness was surrounding.  
 (b) \*I saw that the night was setting in.
- (53)  $m\bar{e}$  ne dekhā ki uske hōṭh hil rahe h̄  
 I Ag. saw that her lips move prog. aux.  
 (a) I saw that her lips were moving.  
 (b) I saw that she was trying to speak.



- (54) *mē ne uske hoṭhō ko hilde hue dekhā*  
 I Ag. her lips obj. moving saw  
 (a) I saw her lips moving.  
 (b) \*I saw she was trying to speak.
- (55) *mē ne dekhā ki ciriyā cāhak rahī hē*  
 I Ag. saw that birds chirp prog. aux.  
 (a) I saw that the birds were chirping.  
 (b) I saw that it was morning.
- (56) *mē ne ciriyō ko cāhakte hue dekhā*  
 I Ag. birds obj. chirping saw  
 (a) I saw the birds chirping.  
 (b) \*I saw it was morning.

Notice that sentences (51), (53), and (55), are structurally similar to (47). However, they fail to undergo raising. Also, notice that (51), (53), and (55), are not semantically similar to their raised counterparts (52), (54), and (56), respectively. (51), (53), and (55), express two meanings while their raised counterparts express only one meaning. In other words, the meaning (b) is blocked in the raised sentences (52), (54), and (56). In (51), (53), and (55), (a) expresses literal (*vācyā*) meaning while (b) expresses suggested meaning (*vyāgya*).<sup>7</sup> Native speakers feel that the suggested meaning (i.e., in (b)), is more prominent (*pradhāna*) than the literal meaning in (a), while they feel that the literal meaning is of secondary importance (*gōṇa*). Thus, according to the native speakers it is the suggested meaning which is in focus. Also, they feel that it is (a) which is suggestive of (b). In other words, they feel that the suggested meaning in (b) is based on the literal meaning in (a).

Now let us consider the raised counterparts (52), (54), and (56). The meaning in (b) which is prominent in the non-raised sentences, is totally lost in their raised counterparts.

On the basis of the above facts about the semantics of (51)-(56), we can formulate the following hypothesis: Raising fails to apply under the following conditions: (a) if the lower clause expresses two meanings, i.e., literal and suggested, (b) if the suggested meaning is of primary importance, and (c) if the suggested meaning is to be expressed.

This hypothesis is based on the facts that while the non-raised sentences (51), (53), and (55), express both literal and suggested meaning, their raised counterparts fail to do so.

The above hypothesis attributes the failure of the application of raising to the semantics of the above sentences. However, whether or not raising should apply does not purely depend on the semantics of the sentences such as above. Pragmatic conditions play an important role

in this decision. For example, the suggested meaning, such as in (b) (in (51), (53), and (55)) is derivable from the literal meaning in (a) only if the pragmatic conditions allow for it. If pragmatic conditions do not allow for the suggested meaning, then sentences (51), (53), and (55), convey only the literal meaning. Let us consider the following case: if somebody utters (55) while reporting his experience of watching birds chirping in the afternoon in a bird sanctuary, then the suggested meaning, (i.e., "I saw it was morning"), is blocked. In such cases the process of raising applies and the raised sentences convey the literal meaning, (i.e., "I saw the birds chirping.").

This property of a sentence to convey suggested meaning (vyāgya) through its literal meaning (vācya) is discussed in detail in the treatises on Sanskrit poetics in 800 A.C. by Anandavardhana and again in 1100 A.C. by Mammaṭa. Two major points discussed in the above treatises are relevant for the present discussion. (a) Śabdārtha (word-meaning) and vākyārtha (sentence-meaning) are the two semantic levels which serve as the basis for the suggested meaning, and (b) vyāgyārtha (suggested meaning) can come about on the basis of the context. It is observed<sup>8</sup> that when certain contextual peculiarities (Kunjuni Raja 1963:311) are already known to the reader then the primary meaning gives rise to the suggested meaning. For example, a young girl who is fond of roaming around with men, utters the following sentences, "Mother, there are no groceries in the house. Tell me what should we do? The day does not stay like this forever you know." In the context of the character of the speaker, (i.e., the young girl), the above sentence suggests that the speaker wants to go out to see her lover. This suggested meaning is based on the primary meaning of the sentences.

The role of extralinguistic factor(s) in determining the total meaning of a sentence has been discussed variously in current literature in linguistics. For example, Morgan (1978) points out that the conventions of language use determine the meaning of a sentence such as 'Can you pass the salt?'. In English, the above question conveys a polite request 'Please pass the salt!'. According to Morgan, it is a convention of the language use that a question such as the above, is used by native speakers of English to express a polite request.

4.2. Explanation. In the preceding section we have seen that raising blocks the suggested meaning. Therefore, in order to convey the suggested meaning raising should be blocked in the sentences such as (51), (53), and (55). The question arises as to why raising blocks the suggested meaning. Borkin (1974) and Bach (1977) have already observed that a sentence which is not raised conveys a wider range of meaning as compared to its raised counterpart. In what follows I will discuss two possible hypotheses for the phenomenon.

4.3. Sentence structure and suggested meaning. The first hypothesis can be described as follows: in Hindi, there is a correlation between the sentence-structure and the suggested meaning. The loss of suggested

meaning in a raised sentence is a consequence of a more general rule in Hindi, namely, that if a sentence conveys suggested meaning then any change in the sentence-structure results in the loss of suggested meaning. Thus, a syntactic process which causes change in the sentence-structure is blocked when suggested meaning is to be conveyed. Since raising changes the structure of a sentence, (i.e., it transforms the sentence into a participial phrase), it is only as expected that it fails to convey the suggested meaning. The following evidence supports this hypothesis: syntactic processes such as, nominalization, and passivization, which change the structure of a sentence are also blocked for the sentences such as (51), (53), and (55). First, let us consider the process of nominalization. The primary function of this process is to transform a sentence into a nominal phrase. The following examples illustrate this process.

- (57) jān kitāb parh̄tā h̄  
 John book read aux.  
 John reads a book.

Nominalization applies yielding the following sentence.

- (58) jān kā kitāb parh̄nā  
 John of book reading  
 John's reading the book.

The above process is discussed in details in Kachru (1966) and (1980). When this process applied the following changes take place: (a) the subject takes the possessive postposition (kā/ke or kī) (i.e., jān kā 'John's' (58)) and (b) the main verb is changed into its infinitive form, (i.e., parh̄nā 'reading' (58)).

When this process applied to (51), (53), and (55) the resulting phrases (59), (60), and (61) fail to convey the suggested meaning.

- (59) andhere kā ghir̄nā m̄ ne dekh̄  
 darkness of surrounding I Ag. saw  
 (a) I saw the darkness surrounding.  
 (b) \*I saw the night setting in.
- (60) uske hoth̄ kā h̄ilnā m̄ ne dekh̄  
 her lips of moving I Ag. saw  
 (a) I saw the moving of her lips.  
 (b) \*I saw her trying to speak.
- (61) ciṛiȳ kā cah̄knā m̄ ne dekh̄  
 birds of chirping I Ag. saw  
 (a) I saw the chirping (of) birds.  
 (b) \*I saw it was morning.

Examples (59)-(61) point out that (a) the process of nominalization changes the sentence-structure and (b) the resulting phrases fail to convey the suggested meaning.

Now let us consider the process of passivization. This process is discussed in detail in Kachru (1980) and in Pandharipande (1981). This process can be illustrated in the following examples.

- (62) vah kām nahī kartā  
 he work neg. does  
 He does not do the work.

Passive applies yielding the following sentence.

- (63) us se kām nahī kiyā jātā  
 he by work neg. did go  
 (a) The work is not done by him.  
 (b) He cannot do the work.

Notice that passivization causes the following changes in the sentence-structure: (a) the ex-subject vah 'he' is followed by the postposition se 'by', (b) the auxiliary verb jānā follows the main verb and (c) the main verb is in its participial form when the above process applies to the sentences such as (51), (53), and (55), the resulting sentences fail to convey the suggested meaning. In what follows I will present a sentence similar to (51), (53), and (55), in order to illustrate the effect of passivization. The reason for choosing an example other than (51), (53) or (55), is that these examples express non-volitional acts. In other words, (51), (53), and (55), express acts which are intentionally performed by the agent. In Hindi, a verb undergoes passive only if it expresses a volitional act (Pandharipande 1978, 1981). Therefore, (51), (53), and (55) are passivizable. Consider the following examples.

- (64) mē ne dekhā ki vah nāk bhṛhē caṛhā rahā hē  
 I Ag. saw that he nose eyebrows raise prog. aux.  
 (a) I saw that he was raising (his) nose and eyebrows.  
 (b) I saw that he was getting angry.

Notice that (64) conveys both literal (a) and suggested (b) meanings. Now consider the following example (65). (65) is the resulting sentence after the application of passive to (64). Also notice that (65) conveys only the literal meaning.

- (65) mē ne dekhā ki us se nāk bhṛhē caṛhāī jā rahī hē  
 I Ag. saw that he by nose eyebrows raised go prog aux  
 (a) I saw that the nose and the eyebrows were being raised  
 by him.  
 (b) \*I saw that he was getting angry.

Now I will present more evidence to support the above hypothesis. It will be pointed out that if a syntactic process does not change the structure of a sentence, then the sentence continues to convey the suggested meaning. In Hindi, the lower clause in sentences such as (51), (53), and (55), can be fronted. In this case, the structure of the fronted clause remains intact. Consider the following examples.

- (66)  $m\ddot{e}$  ne dekhā ki baccā ro rahā hē  
 I Ag. saw that child cry prog. aux.  
 I saw that the child was crying.
- (67) baccā ro rahā hē yah  $m\ddot{e}$  ne dekhā  
 child cry prog. aux. this I Ag. saw  
 I saw it that the child was crying.

When the lower clauses in (51), (53), and (55) are fronted respectively, then the resulting sentences (68), (69), and (70) continue to convey the suggested meaning.

- (68) andherā ghīr rahā hē yah  $m\ddot{e}$  ne dekhā  
 darkness surround prog. aux. this I Ag. saw  
 (a) I saw it that the darkness was surrounding.  
 (b) I saw that the night was setting in.
- (69) us ke hōṭh hil rahe the yah  $m\ddot{e}$  ne dekhā  
 her lips move prog. aux. this I Ag. saw  
 (a) I saw it that her lips were moving.  
 (b) I saw that she was trying to speak.
- (70) cīriyā cahak rahī thī yah  $m\ddot{e}$  ne dekhā  
 birds chirp prog. aux. this I Ag. saw  
 (a) I saw it that the birds were chirping.  
 (b) I saw it was morning.

In this section it was pointed out that if a syntactic process changes the sentence-structure, then the resulting sentence/phrase loses the suggested meaning. In contrast to this, if a syntactic process does not change the sentence-structure then the resulting sentence continues to convey the suggested meaning.

4.4. More evidence. The relationship between the sentence-structure and the suggested meaning is not restricted only to Hindi. The following evidence shows that it is found in the English sentences as well. Let us consider the example discussed in Morgan (1978 section 4.1). Consider examples (71) and (72). While (71) is in direct speech, (72) is in the indirect speech. Notice that the structure of the lower clause is not

the same in (71) and (72). Also notice that while the sentence "Can you pass the salt?" conveys both literal and suggested meanings in (71), its counterpart in (72) fails to do so.

- (71) He said to me, "Can you pass the salt?"  
 (a) He asked me whether I could pass the salt.  
 (b) He requested me to pass the salt.
- (72) He asked me whether I could pass the salt.  
 \*He requested me to pass the salt.

Examples (71) and (72) point out that the change in sentence-structure blocks the suggested meaning.

4.5. Topic. Another possible hypothesis for why raising blocks the suggested meaning is as follows: Davison (1979) suggests that whether or not an NP (in English) undergoes raising is determined on the basis of the following condition: 'The raised NP must be a good topic, and the rest of the complement clause must be a good comment and express something about the referent of the topic NP.' Davison (1979) further claims, 'NPs whose referent is directly known to the speaker or to which the speaker refers on grounds stronger than just deduction or supposition about their existence, are NPs which are excellent candidates for being the topic of the utterance they occur.' Within this framework the above phenomenon concerning (51), (53), and (55), will have to be explained as follows: (a) the raised version of (51), (53), and (55) conveys only the literal meaning because when the literal meaning is conveyed overt subjects, i.e., andherā 'darkness'(51), hōth 'lips' (53), and ciriyā 'birds'(55), are topics. Moreover, when (51), (53), and (55) convey literal meaning, the referent of the subject NP is clear. (b) When the lower clause conveys the suggested meaning, no NP within the clause can be said to be the topic but rather, the whole proposition is the topic. Moreover, the referent of the topics, (i.e., the night is setting in (51), she was trying to speak (53), and it was morning (55)) are known on the basis of the conventions of the language use. Since there is no particular NP which can be labelled as topic, no NP can be raised out of the lower clause to the higher clause. As a result, the raised counterpart fails to convey the suggested meaning.

4.6. Problems. The above hypothesis faces the following problems: (a) it is not clear why the subject NP is the topic when literal meaning is to be conveyed while it is not when the suggested meaning is conveyed. Kachru (1980) points out that an informal definition of topic in Hindi is as follows: if the question 'what?' is asked with reference to the verb in a Hindi sentence, then the part of the sentence which answers the question is usually the topic of the sentence. According to this definition the whole proposition, i.e., the lower clause will have to be labelled as topic in sentences such as (51), (53), and (55). No particular NP can be treated as the topic. If this analysis is correct then raising should be blocked irrespective of whether or not the lower clause conveys the literal/suggested

meaning; (b) according to Davison's hypothesis, the NP whose referent is directly known to the speaker and hearer, constitutes an excellent candidate for topic which is raised comfortably. However, the following example shows that even when the referent is directly known to the speaker/hearer raising is blocked.

- (73). mē ne dekhā ki merī bātē usko pareśān kar rahī hē  
 I Ag. saw that my talk him bother do prog aux.  
 I saw that my talk was bothering him.

Raising applies to (73) yielding the following sentence.

- (74) \*mē ne apnī bātō ko usko pareśān karte hue dekhā  
 I Ag. my(self's) talk him bother doing aux. saw  
 I saw my talk was bothering him.

In (73) merī bātē 'my talk' is the subject NP, the sentence expresses literal meaning and the referent of the subject NP, i.e., merī bātē 'my talk' is clear and yet raising fails to apply, and (c) moreover, the hypothesis misses the generalization, namely, that suggested meaning is blocked if the structure of the sentence is altered. In contrast to this, the former hypothesis explains the phenomenon in (51), (53), and (55), on the basis of a more general rule which is independently motivated and is needed in the language.

5.0 Conclusion. In the preceding sections it was pointed out that (a) in order to provide an adequate analysis of the possessive post-positions, the progressive construction and Raising, pragmatic conditions need to be taken into consideration, (b) two major aspects of raising are observed, (i) raising blocks the suggested meaning and (ii) raising changes the structure of the sentence, therefore it fails to convey the suggested meaning. It was further pointed out that (ii) follows from a more general rule in Hindi, namely, that any change in sentence-structure results in blocking the suggested meaning.

The discussion in this paper points out that it is the interaction of grammar and pragmatics that explains the linguistic facts. However, at present it is not clear how to formally represent this interaction. In order to do so we need to devise an empirical criterion to define 'grammatically' determined versus 'pragmatically' determined aspects/features of language.

The pragmatically oriented hypothesis presented in this paper is also relevant for language teaching and learning, as Oller (1969:47) points out, "The concept of pragmatics has definite implications for theories of language learning and methods of language teaching with respect to material construction for instance it indicates that the structures should be presented in meaningful contexts." The hypothesis discussed here is also relevant for devising what Wilkins (1977) labels as "notional syllabuses" or what is termed as "communicative syllabuses" in Munby (1978). Such syllabuses are based on the assumption, namely, that

"...since those things that are not conveyed by the grammar are also understood, they too must be governed by 'rules' which are known both to speaker and hearer. People who speak the same language share not so much a grammatical competence as a communicative competence" (Wilkins 1977:11). In order to develop a communicative competence in students a pragmatically oriented explanation of linguistic facts is essential.

Finally, this paper points out that the grammar of a language does not always adequately explain what is conveyed by the speakers of that language and therefore, pragmatics needs to be incorporated into the core of the study of language.

#### NOTES

An earlier version of this paper was presented at the Second South Asian Language Analysis Roundtable held in April 1979, at the University of Illinois at Urbana-Champaign.

<sup>1</sup> Locational postpositions are so-called because their primary function is to indicate location. In English, for example, the locational prepositions are in and at. The locational postpositions mē 'in' and ke pās 'near' in Hindi are functionally similar to the locative case in Sanskrit, German, etc. In addition to the above, those postpositions are used to indicate a particular type of possession (cf. section 1.1.).

<sup>2</sup> The opposition between abstract versus -abstract can be explained as follows: the possessions such as son, daughter, book, etc. are (-abstract), i.e., the above type of possessions have an existence, independent of the possessor. In contrast to this the abstract possessions are fever, courage, etc. which do not have a existence independent of the possessor.

<sup>3</sup> An interesting piece of evidence to support this hypothesis comes from the following: in Hindi, usko khuṣī hē 'he is happy' (literally, 'he has happiness' indicates that he is happy because of some circumstantial reason. If the speaker wants to indicate that he is a happy type of person, then the speaker uses another construction, i.e., vah khus mizāz ādmī hē 'he is a man of happy disposition'.

<sup>4</sup> Example (37) is grammatical in the following two contexts, i.e., (a) when the speaker is actually witnessing his friend approaching death and (b) when marnā 'to die' expresses metaphorical meaning "to work to death" (i.e., to do very hard work).

<sup>5</sup> For more discussion on punctual verbs refer to Lyons (1969).



<sup>6</sup>For example, it is not possible in Hindi for a perfective participle such as *royā huā* 'cried' to refer to *laṛkā* 'boy' (i.e., *royā huā laṛkā* 'cried-boy' is not grammatical in Hindi since the boy cannot be said to be in the resulting state of the act of crying. Similarly, *likhī huī* 'written' does not refer to the subject, e.g., *laṛkī* 'girl' (i.e., *\*cittī likhī huī laṛkī* 'the girl who has/had written a letter'.). Notice that the girl in the above sentence cannot be said to be in the resulting state of the act of writing.

7 and 8 For a detailed discussion on the literal (*vācyā*) and suggested meaning refer to (a) *kāvya prakāśa* (1933) (Chapters 1-3), ed. by Sukhtankar S. S. (for complete reference, see bibliography) and (b) *Studies in Dhvanyāloka*, 1938, by Subbrama Pattar P. S. (for reference, see bibliography) and (c) Kunjuni Raja K., 1963, *Indian theories of meaning* (for reference, see bibliography).

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THE SYLLABLE IN PHONOLOGICAL THEORY:  
ARGUMENTS FROM TAMIL

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This paper shows that the syllable plays an important role in Tamil phonology. It is claimed in Halle and Vergnaud (1980) that unlike the onset and the rime, the constituents of a syllable, the syllable itself as a constituent hardly plays any role in phonological theory, and therefore its relevance to phonological theory is marginal. This paper shows that the syllable does play an important role in the description of morphological and phonological generalizations in Tamil, and that its role in Tamil phonology is far from marginal.

0. Introduction

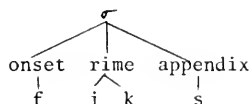
This paper is mainly a reaction to the sceptical statement made in Halle and Vergnaud (henceforth HV) (1980) about the need for the theoretical construct 'syllable' in phonological theory. They state that unlike the onset and the rime, the constituents of a syllable, the syllable itself as a constituent hardly plays any role in phonological theory, and that therefore, its relevance to phonological theory is marginal. I will show in this paper that the syllable does play an important role in the description of morphological and phonological generalisations in Tamil, and that its role is far from marginal.

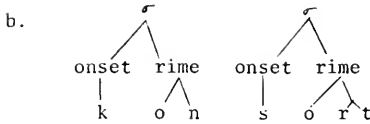
I am aware that in the recent literature [Kiparsky (1979), Selkirk (1980), Prince (1980), etc.], HV's verdict regarding the role of the syllable in phonological theory has not been unanimously accepted. The decision to label the onset and rime as W and S respectively makes it obligatory to recognise the  $\sigma$  of which these form the binary branches. I will merely mention in passing that the arguments put forward by Selkirk (1980) for recognising the construct  $\sigma$  make use of only surface phonetic phenomena like aspiration in English, and flapping in American English, thus not refuting the HV stand that  $\sigma$  is only a surface phenomenon, and in that sense, (perhaps) marginal.

1. Preliminaries

Before one can discuss the validity of the construct 'syllable' in Tamil, one must establish the nature and structure of its components, the onset, the rime, and the appendix. These constituents have already been proposed in the literature to date. For instance, English words like fix and consort have been argued to be syllabified as:

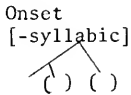
(1)a.



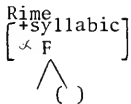


I shall assume that the structure of the syllable in Tamil is as given in (2).

(2)a. Onset Template for Tamil



b. Rime Template for Tamil



where F is the complete feature complex for vowels.

The consequence of (2)a. and b. is that we will have syllabifications such as illustrated in (3):

- (3)a.    o r o r            .  
          | | | |  
          p a ĉ i        'hunger'
- b.        o r o r  
          | ^ ^ |  
          p aa ṭṭ i        'grandmother'
- c.        o r o r  
          | | ^ ^  
          ĉ a mp aa        'a variety of rice'
- d.        o r o r  
          | | ^ |  
          ĉ e ỵṭ i        'news'

I have argued in Vijayakrishnan (in preparation) that lexical entries in Tamil should specify whether the rightmost segment is an appendix or not. This information is necessary to capture the systematic differences between pairs like (4)a. and b.

- (4)a.        a  
          k a ṅ        'eye'
- b.        k a ṅ        'joint of a bamboo'

There are several systematic differences between (4a) and (4b) that motivate the representations given above. (4a), for example, has two surface variants, kaṅ and kanni, but (4b) has only one, namely, kaṅi. Similarly, when compounded, (4a) yields forms like kaṅcewi (from /kaṅ/ 'eye' and /cewi/ 'ear'), while (4b) gives forms like kaṅiḱkaal 'ankle' (from /kaṅ/ 'joint of a bamboo' and /kaal/ 'leg').

Now that we have established the nature and structure of the constituents of the Tamil syllable, we are ready to take up the issue of the role of the syllable in phonological processes in Tamil. In section 2, I shall show that there is a morpheme structure constraint in Tamil, the formulation of which has to make crucial use of the construct 'syllable'. In section 3, I shall demonstrate that the process of gemination in compounds applies only if the first stem obeys certain conditions which include that it be monosyllabic, and that the relevant environment for the rule cannot be adequately stated without referring to the syllable.

## 2. A Morpheme Structure Condition

It is not clear whether the facts pertaining to possible and impossible Tamil sequences ought to be stated as a constraint of possible sequences or as implicational statements. We will not go into this problem in this paper. We are only concerned with the manner of stating generalisations pertaining to possible Tamil sequences.

I will look at one morpheme structure condition relating to the occurrence of branching rimes in Tamil sequences. In Tamil, non-derived sequences cannot end in non-low branching rimes if the sequence has more than one syllable. Monosyllables can have branching rimes. Thus, we have [pū] 'flower', [pō] 'go', [pī] 'shit', etc., while [kalapū], [tarapō], and [canapī] are not 'possible' Tamil sequences at all.

One might say that this can be stated easily on the string which projects all and only the rimes of sequences.

$$(5) * \left[ \dots r \begin{array}{c} r \\ [-low] \\ \wedge \end{array} \right] \text{ Projection: } r$$

But this is incorrect for two reasons. It would brand the perfectly acceptable strings in (6)a. and b. as unacceptable, as the rime projection would ignore the final segments which are not part of the rime.

- (6)a. /kareṅ/ 'a male or female elephant'  
 b. /kuṅpaḷamooc/ 'fish brought from the Maldives'  
 c. /tiṅkukuṅ/ 'suddenness'
- (7)a. /taṅpuur/ 'tanpura'  
 b. /alloon/ 'moon'

Therefore, a rime projection would not suffice. We can state this elegantly using  $\sigma$  as (8) demonstrates.

- (8) M. S. C.  
 \* [... $\sigma$   $\sigma_1$ ] Projection:  $\sigma_1$   $\sigma_1$   
 [-low] r a

The constraint is now formulated on a projection of the superordinate syllable and the syllable along with the rime.<sup>3</sup> In a projection of these elements, the starred sequence is unacceptable.

One could argue that it is possible to state the constraint at the level of onsets and rimes, as \* [... r o r]. But it is fairly obvious that the sequence o r is used as a notational variant of  $\sigma$ .

### 5. Sonorant Onset Gemination

Yet another generalisation that involves the crucial use of  $\sigma$  is a process of gemination in compounding. Here, the initial sonorant onset of the second stem is doubled if and only if the first stem is monosyllabic and contains a nonbranching rime. Consider (9) and (10):

- (9)a. /pu/ /neri/ [punneri]  
 'conduct'
- b. /mu/ maṭi/ [mummaḍi]<sup>4</sup>  
 'three' 'lap' 'the three folds on the belly of beautiful women'
- (10)a. /koo/ /naagam/ [kōnāgam]  
 'king' 'snake'
- b. /t̄ii/ /naattam/ [t̄inātram]  
 'bad' 'smell'
- c. /maa/ /nilam/ [mānilam]  
 'big' 'land' 'earth'
- d. /puu/ /maṭi/ [pūmaḍi]  
 'soft' 'lap' 'the soft udders of a cow'
- e. /naa/ /makaḷ/ [nāmagaḷ]  
 'tongue' 'daughter' 'goddess of learning'

The doubling of the initial onset of the second stem is restricted to compounds with monosyllabic first stems with nonbranching rimes. If the initial stem is not monosyllabic, the doubling in question does not take place.

- (11)a. /aṭi/ /maṭi/ [aḍimaḍi]  
 'bottom' 'lap' 'secret place in waist cloth'
- b. /koṭi/ /maram/ [koḍimaram]  
 'flag' 'tree' 'flagstaff'

We may state the rule of gemination as follows:

$$(12) \quad C \rightarrow CC / \left. \begin{array}{c} \sigma_1 \\ \text{r} \end{array} \right\} \text{----}^5$$

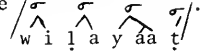
As far as I know, rule (12) cannot be formulated without the use of  $\sigma$  or a notational variant of it.

#### NOTES

<sup>1</sup>See Vijayakrishnan (in preparation) for a detailed discussion.

<sup>2</sup>We can extend this generalisation to low vowels by saying that in words like [rājā] 'king', the final [a] is added later to the stem /raaja/.

<sup>3</sup>Onset final sequences will have the structure  $\sigma$ , and therefore, when  $\sigma$  is projected, the final  $\sigma$  will be projected without the onset of course. For instance, /wiḷayaat/ 'play' will have the structure



<sup>4</sup>mu is related to the form muu as in words like [muunri] 'three'. The underlying representation for [mummaḍi], however, cannot be /muu+maḍi/, as there is no general rule shortening the vowel in this environment. I assume that /mu/ and /muu/ are listed in the lexicon as distinct suppletive stems. I am grateful to Harold Shiffman for bringing this to my attention.

<sup>5</sup>The rule has a few additional complications which are not relevant for our purposes.

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OBJECT-MARKING IN THE HISTORY OF NEPALI:

A CASE OF SYNTACTIC DIFFUSION

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Modern Nepali uses the postposition lai to mark human direct objects, indirect objects, and dative-subjects. Early Nepali, however, used a variety of postpositions for each of these grammatical relations. Therefore, a change occurred in the encoding strategy for objects and also in the postposition used. The motivation for this change seems to have been to treat pairs of objects more alike--dative-subjects and indirect objects; indirect objects and direct objects. The grammar of Nepali treats dative-subjects and indirect objects alike as illustrated by the rule of VOLEX; direct objects and indirect objects are also treated similarly, there being surface structures in which these case-roles are ambiguous. The change in object-marking has diffused through the grammar beginning with dative-subjects and moving then to indirect objects and then to human direct objects. The progress of this change shows that syntactic change diffuses through the grammar gradually, spreading in frequency and number of possible environments.

Introduction

Recent work on syntactic change, such as Chung 1977 and Naro 1981, has shown that syntactic change progresses gradually through a grammar; and usually, syntactic change begins as an adjustment to the grammar to fit the reinterpretation of surface structures. In this paper, I shall present evidence on a shift in object-marking in Nepali which supports this view of syntactic change.

The paper is organized as follows: section 1 presents the object-marking system of Modern Nepali; and section 2 presents that of Early Nepali, c. 1350-1700 A.D.; in section 3, I discuss what motivations there might be for a shift in object-marking from Early to Modern Nepali; and in section 4, I examine possible paths for this change; sections 5 and 6 contain data from the intervening stages of the language; and section 7 examines what recent grammars have said about object-marking; in section 8, I discuss the results of this research and "syntactic diffusion."

1. Object-Marking in Modern Nepali

1.1. The object-marking strategy of Modern Nepali is to encode all objects with the same postposition. This postposition lai is used principally to

mark three grammatical relations: definite/human direct object (DO); indirect object (IO); and dative-subject (KO).<sup>1</sup>

Nepali DOs are unmarked if nonhuman (1); however, if human or emphatic/definite, DOs are marked with lāi (2-3):

- |     |    |        |           |        |                     |
|-----|----|--------|-----------|--------|---------------------|
| (1) | a. | mai-le | kām       | garē   | 'I did the work'    |
|     | b. | ma     | gāi       | herchu | 'I see the cow'     |
| (2) | a. | mai-le | śyām-lāi  | herē   | 'I saw Shyam'       |
|     | b. | ma     | sipāi-lāi | herchu | 'I see the soldier' |
| (3) | a. | mai-le | kām-lāi   | garē   | 'I did that work'   |
|     | b. | ma     | gāi-lāi   | herchu | 'I see that cow'    |

IOs are marked with lāi whether human or not:

- |     |    |        |          |      |     |                             |
|-----|----|--------|----------|------|-----|-----------------------------|
| (4) | a. | mai-le | śyām-lāi | pāni | diē | 'I gave the water to Shyam' |
|     | b. | mai-le | phul-lāi | pāni | diē | 'I watered the flower'      |

Essentially then, any object of a transitive verb which is human or semantically/pragmatically distinctive is marked with lāi.

In addition to marking IOs and DOs, lāi is used as the marker of dative-subjects (cf. Masica 1976:159-69; Kachru 1970), NPs which seem to be the semantic subject of certain sentences but are not the grammatical subjects as in (5):

- |     |    |            |       |        |                          |
|-----|----|------------|-------|--------|--------------------------|
| (5) | a. | rām-lāi    | bhok  | lāgyo  | 'Ram became hungry'      |
|     | b. | sitā-lāi   | dukh  | cha    | 'Sita is sad'            |
|     | c. | DākTar-lāi | ris   | uThcha | 'the doctor feels angry' |
|     | d. | ma-lāi     | āpata | paryo  | 'I had an accident'      |
|     | e. | rām-lāi    | aulo  | cha    | 'Ram has malaria'        |

For the purposes of this paper, I shall assume KOs only occur with intransitive verbs; thus, they can be syntactically differentiated from IOs and DOs.<sup>2</sup> (Also, I shall refer to all three grammatical relations as "objects.")

1.2. This system of case-marking nonsubjects is common among South Asian languages; e.g., Hindi shows the same object-marking strategy with ko:<sup>3</sup>

- |     |    |          |          |       |                             |                               |
|-----|----|----------|----------|-------|-----------------------------|-------------------------------|
| (6) | a. | rām-ne   | phal     | khāyā | 'Ram ate the fruit'         |                               |
|     | b. | rām-ne   | larke-ko | dekhā | 'Ram saw the boy'           |                               |
| (7) | a. | rām-ne   | śyām-ko  | patra | likhā                       | 'Ram wrote a letter to Shyam' |
|     | b. | ghore-ko | cārā     | do    | 'give fodder to the horse!' |                               |

- (8) a. rām-ko bhuk lagī 'Ram became hungry'  
 b. pitā-ko krodh āyā 'Father became angry'  
 c. larkī-ko bukhār hai 'the girl has a fever'

So, Nepali is not unusual in having this object-marking strategy.

1.3. The use of this object-marker in Nepali dates back at least a century, for Grierson (1916:17ff.) presents lāi as the only marker of DOs, IOs, and KOs, and most of the texts he used to describe the language were written in the late 19th century. In the passages Grierson quotes as examples from the Calcutta Auxiliary Bible Society translation (1902), lāi appears exclusively as the object-marker:

- (9) a. ani tyes-le tyes-lāi suṅgur charāūnu-lāi āphnā kheta mā paThāyo  
 'And he sent him into his fields to feed the swine.'  
 b. ani tyes-le tiniharu-lāi āphnu jivikā bāDi diyo  
 'And he divided his possessions between them.'  
 c. ani tyes-lāi apugye hunu lāgyo  
 'And he began to have want.'

Also, in the stories told to R.L. Turner (1921) by Gurkha soldiers from the First World War, lāi is the only marker of DOs, IOs, and KOs:<sup>4</sup>

- (10) a. tyo turkai-lāi pāyā hunde tesai-lāi kaTera tes-ko khun  
 pāni jhāī khāera tirkhā bujhāune thiyāū  
 'If we had caught that Turk, after killing him we would have  
 assuaged our thirst in drinking his blood like water.'  
 b. hāmrai topkhānā-le unharu-lāi dherai goār diyo  
 'Our guns gave much help to them.'  
 c. jamādār dalbir-lāi hukum thiyō pacisoTā bākhṛā kāTnu ko  
 'Jamadar Dalbir received an order to kill 25 sheep.'

So, Nepali employs a common South Asian object-marking strategy, using lai to encode DOs, IOs, and KOs, and this strategy has been employed for at least one hundred years.

## 2. Object-Marking in Early Nepali

2.1. There is, however, no grammatical reason why in Hindi or Nepali these three grammatical relations should be identified in surface structures with a unal case-marking. In Latin, for example, the dative and accusative cases mark IOs and DOs, respectively, and constructions like KOs in South Asian languages may appear with a variety of cases including accusative, dative,

and genitive.<sup>5</sup> A similar situation exists in Sanskrit: again DOs and IOs are marked with separate cases, and KO-like structures may be construed with genitive or dative.<sup>6</sup>

Indeed, Nepali was at one time more like Latin and Sanskrit in its object-marking strategy, in that DOs, IOs, and KOs were not marked with a single postposition. Rather, in Old Nepali there were several strategies used for marking objects, and each of the three grammatical relations had a different set of markers. Between the time of the oldest Nepali records (c. 1300-1350 A.D.) and the end of the 19th century, a major change occurred not only in the surface realization of the object postposition but also in the strategy the language uses to mark objects. That is, the marker changed, and the system of object-marking changed. Essentially, we are dealing with a change from one arbitrary system to another, although during the progress of the change these three grammatical relations may have become semantically grouped together and that may have affected their becoming syntactically identified.

2.2. Let's look at the earliest examples of object-marking in Nepali. Until about 1700, the examples are not as complete as we would wish, because most of the surviving documents are deeds of gift inscribed on metal, and these texts are very formulaic. For example, human DOs do not appear frequently in these texts. However, it is apparent there are a variety of strategies available for marking the grammatical relations, and no one strategy dominates all three.

2.2.1. The earliest example of lāi is found marking KOs in the late 14th century:<sup>7</sup>

- (11) a. rāmadāsa pādhyā tin lāya sudām mayā bhaicha (1398)  
'Ramdas Padhya and three others received this gift.'
- b. rāmadāsa pādhyā lāhi vramavitṛā mayā bhaicha (1398)  
'Ramdas Padhya received this Brahman land gift.'

In the same construction we also find upar instead of lāi:<sup>8</sup>

- (12) a. śri śri śri śri śri bhānasāi-ko āgyā manupādhyā-upar  
mayā bhaicha (1529)  
'As an order of Shri Panch Bhana Shah, Manu Padhya has received this gift.'
- b. hanṃyā vohorā-upra mayā yesi bhaicha (1604)  
'Hanya Bohora has received such a gift.'

Finally, kana is found very late in this period marking KOs:

- (13) ḷasa vāḷja-kana lahu paḷa ta tās-ko upāu kaḷū (1643)  
'I shall tell the cure for a hawk which loses blood.'

2.2.2. A similar situation, i.e. much variation, exists in the case-marking strategy for IOs in this period. Very early we find IOs marked with anusvara, as in (14):

- (14) a. āpanā ucitai kari jayākara pādītai Dhūyan (1336)  
'Having made it suitable for himself, may Jayakar Pandit enjoy this.'
- b. meri janmāuti Dhoya ākhara padhāyā-kā prasāda golhu joisī  
kanakapatra-ki bhāshā pasā kari akryā chū ā(10) ... (1356)  
'Having made the promise of this goldplate to Golhu Joisi as a favor for teaching me letters and making my horoscope, I have freed from authority this field ...'

But there are also throughout the period IOs with no surface marking at all:

- (15) a. ... śiūsarma visnudāsa pasā kiyā chāū (1404)  
'We have made this promise for Shivasharma and Vishnudas.'
- b. arka rājā dinu nahi (1663)  
'Don't give it to any other king.'

Inflected pronouns were also used:

- (16) ... van pāsho inu tin janā-le hāmu diyāko cha (1590)  
'These three men have given us the forest and hillside.'

And kana is found marking IOs since the 16th century:

- (17) a. pāTho māri ragatyāyā daicāvala lāi gāu ghara-kana vilo  
rājā surtisāhi Thakura-kana saveTTo di pakkā garyāko cha (1581)  
'Having brought bloodied yogurt-and-rice, having killed a young he-goat, this (promise) has been sealed having given a haunch to King Surti Shah Thakur and a share of meat to the neighborhood.'
- b. athavā mādāgni ho ta āddā māda-sita cirāi-ko māsu  
muśā-ko māsu bhijāunu sikara-kana dinu (1643)  
'If there is indigestion, wet mouse-meat and bird-meat with liquor and give it to the hawk.'

2.2.3. DOs in this period are usually found with no surface marking, and this includes human DOs:

- (18) a. jo yo kanakapatra bhitāra-ki bhāshā ghāla ghalāva shosa sosāva  
so āpnā dyopitara ekai sai purushā kūbhinaraka ghāla (1356)  
'Whoever destroys or has destroyed, steals or has stolen the promise of this goldplate, he shall put into hell one-hundred members of his family.'

- b. āpaṇā rājā maṇāi becu (1663)  
'Having warned your king, you may sell.'

However, there are also examples of anusvara and kana for DO marking:

- (19) vrahmā vishNu ishvara vuddha dharmā sāgha eti-kā devā ghale (1356)  
'You will destroy such gods as Brahma, Vishnu, Ishvar, Buddha, Dharmā, and Sangha.'

2.2.4. From these data, we can see there is no unified object-marking strategy for KOs, IOs, and DOs in this period. DOs appear generally unmarked, although they may be marked with anusvara or kana. IOs are usually marked in some way with anusvara, kana, or an inflection, but sometimes IOs remain unmarked. KOs are always marked, and we've seen lāi, upar, and kana used for this purpose. Unfortunately, there is not enough data to really tell what is the "system" at this stage, nor whether 1350 to 1700 is a representative period; however, it is apparent that KOs, IOs, and DOs are not identified syntactically or semantically--they are not considered "alike."

2.3. Between 1700 and 1900 the syntax of KOs, IOs, and DOs in Nepali converged; and the language developed a unal postposition lāi to use with all three. Nepali object-marking presents a case of syntactic change in which the encoding strategy of certain grammatical relations has converged and one postposition has become the dominant marker for encoding all three of these objects.

In the following sections, I shall give more details on the intermediate steps in this change and also discuss why and how this change progressed. The progression of this change is recorded in documents from the 18th and 19th centuries, so we can examine the change in progress. Unlike most examples of change in progress that have been discussed in the literature (Chung 1977; Naro 1981), this change has been completed. And so, the historical evidence can show us how the change progressed and how the variation which was at one time the norm for object-marking eventually died out.

### 3. Motivations for Convergence

3.1. We have seen that KOs, IOs, and DOs were at one time syntactically differentiated by the use of separate sets of markers, and now they are identified syntactically by the common marker lāi. How these grammatical relations are alike probably has had some affect on the process of the convergence in their syntactic encoding. So before looking at the data on this change between the oldest and modern periods, I'd like to discuss syntactic and semantic points of similarity and contrast among these three objects to see whether there are any facts that may explain why Nepali speakers would be motivated to treat them alike.<sup>9</sup>

3.2. For the analysis of syntactic similarities among KOs, IOs, and DOs, I shall assume there are at least three levels of grammar on which they have syntactic functions. These I shall refer to as their "underlying function," "grammatical relation," and "surface case-role."<sup>10</sup>

Let us assume that at the underlying level subjects are what sentences are about, and objects are NPs that verbs associate with subjects. Ignoring all other constituents, we can have three basic underlying structures:

- (20) a. S V            b. S O V            c. S O' O V

O' and O are both objects, but they are differentiated because the number of objects a verb must associate with a subject affects greatly the syntax of the sentence, and because objects that assume the grammatical relation indirect object are secondary to direct objects in frequency and sometimes in syntactic behavior.

On the level of grammatical relations, NPs are defined by functions like those in Relational Grammar (Johnson 1974; Postal and Perlmutter 1974). From the structures in (20) we may derive four basic structures:

- (21) a. PS VI    b'. KO PS VI    b. AS DO VT    c. AS IO DO VT

Since the grammatical relations selected depend in part upon the verb, transitivity has been specified in the verb on this level. (21a) represents a subject and intransitive verb; (21b') and (21b) represent underlying SOV combinations. The underlying subject of an intransitive verb becomes a KO if an O is present (excluding equational sentences), and the O becomes the PS. The underlying subject of a transitive verb becomes an AS, an O becomes a DO; and in (21c), an underlying O' becomes an IO. Again, PS and AS are symbols used mainly for reference.

Finally, the surface case-roles are specified by postpositions, as in (22) for Modern Nepali.

- (22) a. NP- $\emptyset$  VI  
       b'. NP- $l\bar{a}i$  NP- $\emptyset$  VI  
       b. NP- $le$  NP- $\emptyset/l\bar{a}i$  VT  
       c. NP- $le$  NP- $l\bar{a}i$  NP- $\emptyset/l\bar{a}i$  VT

3.2.1. First, we shall examine KOs and DOs which seem the least similar of the three possible pairings. KOs are derived from underlying subjects, while DOs from underlying objects. DOs remain objects at the grammatical relation level; KOs are "demoted" to a chomeur relation. KOs are always marked at the surface, while DOs are marked sometimes, and sometimes they are not marked. Semantically, KOs are almost always human, but there is no such restriction on the DO. KOs and DOs don't occur in the same sentence structures, so the opportunity to perhaps confuse their surface syntactic roles does not present itself. Also, I know of no rule which operates with KOs and DOs as its domain. Thus, there are few common points between KOs and DOs that might motivate Nepali speakers to want to identify them in surface structure.

3.2.2. IOs and DOs seem fairly similar at all levels. Their underlying functions are the same--both are objects associated with a verb. They do have different grammatical relations, and usually they are encoded differently, but whatever marking has been possible for DOs also seems to have

been possible for IOs, although the opposite is not necessarily true. Semantically, IOs are usually human, while again there is no such restriction on DOs.

In Modern Nepali, IOs and DOs are subject to some of the same syntactic rules, but this may be a consequence of the change in surface marking--I don't have any evidence to support saying they have always been treated alike syntactically. However, one structure that is not new can produce surface ambiguity in the roles of DOs and IOs, that is conjunct verbs of the form NP + garnu 'to do NP'.<sup>11</sup>

In sentences with these conjunct verbs, the noun which appears to be a direct object of garnu loses its syntactic identity, and so sentences occur with two objects as in (23):<sup>12</sup>

- (23) a. rām-le gharharu nās garyo  
'Ram destroyed the houses.'
- b. das janā-ko sallāh-sita nayā kām suru garchāũ  
'We'll begin a new job with the advice of ten people.'

So, in these sentences, the leftmost NP--gharharu or nayā kām--should be considered the direct object.

Such sentences may also occur with human objects:

- (24) a. ma euTi keTi-lāi prem garthē  
'I used to love a girl.'
- b. ma timi-lāi biswas garchu  
'I believe you.'
- c. un-le buDhe sakāl-mā taruni swāsni-lāi bihā gare  
'In his old age he married a young wife.'

Whether these compounds are lexicalized or not, two surface analyses for these sentences are possible: S DO NP+V or S IO DO V. The former analysis is strengthened by the noun conjunct losing its syntactic identity as in (25), and the latter analysis by structures in which the separateness of the noun conjunct is emphasized because the preceding object is not in an object case as in (26).

- (25) dherai gharharu nās bhās  
many house-pl. destruction occurred-pl.  
'Many houses were destroyed.'
- (26) ma baDo sukh -ko anubhav garē  
I big happiness-of experience did-ls  
'I experienced great pleasure.'



The two possible analyses would make ambiguous the grammatical relation of these human NPs. I would not say that this has caused IOs and DOs to develop similar surface marking, but it is an instance in which the role of IOs and DOs could be confused, thus weakening their separateness and strengthening a speaker's hypothesis that they should be treated alike.

3.2.3. As for KOs and IOs, they are very unlike in underlying function. KOs are derived from subjects, while IOs are derived from objects. Their grammatical relations are different, and it's only been recently that they have been commonly marked for surface case-role. Both, however, usually precede an unmarked NP derived from an underlying object. Semantically, both are usually human, and both are involved in the meaning of the sentence in terms of "acquiring" the underlying object.

In Nepali, there is a rule which appears to treat KOs and IOs alike. (Actually, "rule" may be too strong a term considering the differences between these two grammatical relations; perhaps "system of correspondences" would be better until further research has been done on the data.) This rule, O-V lexicalization (VOLEX), makes direct correspondences between IOs and DOs and KOs and PSs. The first case, with transitive verbs, is illustrated by the examples in (27-29).

(27) a. ma timi-lāi Dhāt̃ kura gardinā

b. ma timi-lāi Dhāt̃dinā

'I wouldn't lie to you.'

(28) a. us-le āphnā parivār-lāi nās garyo

b. us-le āphnā parivār-lāi nāsyo

'He destroyed his family.'

(29) a. bābu-le rām-lāi mār dinubhayo

b. bābu-le rām-lāi mār̄nubhayo

'Father beat Ram.'

I won't speculate on the form of this rule, because it's not clear whether an underlying O-V combination is unverbated, or whether a verb like nāsnu may be "conjunctivized," splitting into O and V. In either case, there is a surface correspondence between IOs and DOs in sentence pairs related by VOLEX.

This same rule can also be used to explain corresponding sentence pairs like those in (30-32):

(30) a. abhāgi-lāi khāne belā-mā ris uṭhcha

b. abhāgi khāne belā-mā risāṭhcha

'The unfortunate man gets angry at meal times.'

- (31) a. ma-lāi sārāi bhok lāgeko cha  
 b. ma sārāi bhokāeko chu  
 'I have become very hungry.'
- (32) a. ma-lāi rāt bhari nid parena  
 b. ma rāt bhari nidāēnā  
 'I didn't sleep all night.'

Again O-V combinations are unverbated, or a verb like nidāunu is conjunctivized, but in these data, the verbs are intransitive, so KOs appear with conjunct verbs and the corresponding NP is a PS with the unitary verb.<sup>13</sup>

The similarity between these two sets of data indicates both are instances of VOLEX. Even more important to our discussion of these grammatical relations is the fact that VOLEX operates ergatively: the O of intransitive verbs is the subject, while the O of transitive verbs is the direct object; the "promoted" NP becomes either the intransitive subject or transitive direct object. And Nepali, like many South Asian languages, is ergative in the perfect tenses, so the PS and DO would be identified in surface structure with the same marking-- $\emptyset$ . Thus, both KOs and IOs would correspond to the same surface case-role, the ergative, and so they would be treated alike by VOLEX.

Nepali, however, is ergative mostly in subject-marking.<sup>14</sup> The agent of the transitive verb controls verb agreement and other subject properties, and this situation has been present since the earliest records (cf. 14b, 15a). Older Nepali does have examples in which, like Hindi, the DO controls verb agreement, as in (33b):

- (33) a. cār rātā pāshā gayāko chan (1590)  
 'Four red blankets were provided.'
- b. ... van pāsho inu tin janā-le hāmu diyāko cha (1590)  
 'These three men have given us the forest and hillside.'

But for the most part, DOs do not control subject properties. On the other hand, a PS in a dative-subject sentence also does not control subject properties other than verb agreement as is true of other South Asian languages (Kachru, Kachru and Bhatia 1976). In (34a) the KO controls reflexivization and in (34b) it controls conjunction reduction:

- (34) a. un-lāi āphu-māthi dayā lāgyo  
 'He felt pity on himself.'
- b. māsu khāera rām-lāi ris uThyo  
 'After eating meat, Ram became angry.'

While the correspondences between PS and DO are not exact, the domain of VOLEX still provides an example of how KOs and IOs are treated alike in the grammar of Nepali.

3.3. In the preceding, I have tried to find explanations in the grammar of Nepali for why speakers would treat these three dissimilar grammatical relations alike and so cause the convergence of their syntactic encoding in the modern language. We have seen that KOs and DOs are not very similar, except possibly in the area of the semantic feature human; IOs and DOs are similar syntactically, and there is at least one structure which could lead to ambiguous analyses of their roles in surface structure. KOs and IOs are similar semantically, and in addition, they are treated alike by the rule VOLEX. All these points of similarity would be present in earlier stages of the language, although the conjunct verb structures and VOLEX may have been developing with the convergence.

These similarities generally represent interpretations based on surface structures, rather than underlying function. VOLEX would identify KOs and IOs mainly by marking--in earlier stages, corresponding NPs would be marked with a dative postposition if KO or IO, and  $\emptyset$  if "promoted." Conjunct verbs are only ambiguous when compared with other surface structures. So, there are motivations in Nepali for KOs, IOs, and DOs to be treated alike, and these depend on their surface syntactic and semantic similarities.

#### 4. Some Predictions

The results of the preceding section tell us that Nepali speakers associate KOs, IOs, and DOs in the structure of the language, so the convergence in their marking is not just a random change. These results also make certain predictions about the possible paths object-marking convergence may follow. We know the strongest bondings of the three objects are KO-IO and IO-DO. So, the change could spread from IOs to KOs on the one hand and DOs on the other. Or, we might find a pairing phenomenon, in which KOs and IOs converge and IOs and DOs converge eventually producing unity among all three. Or, there could be a chain progression or diffusion of the marking strategy--KOs shift, IOs follow KOs, and DOs follow IOs. Of all the possible permutations of convergence patterns, these three are the most likely.

#### 5. Object-Marking 1700-1775

5.1. Now let's look at what actually occurs in the intervening stages. In this section are presented data from about 1700 to 1775. There is still much variation in the strategies used to mark KOs, IOs, and DOs; each has a set of markers which are not identical in content or frequency of usage.

5.2.1. During the 18th century, we find KOs marked with kana (35), īai (36), upar (37), and tir (38). kana and īai are the most common and least restricted in environment; upar and tir are only found in constructions like the one illustrated here for each.

- (35) a. jo tyati na gara us-kana pācamahāpātaka (1712)  
'Whoever doesn't act in this way, he commits the five great sins.'
- b. puNya-kā garniyā-hoi garāuNiyā-kana puNya adhika hūcha (1723)  
'He who has merit done has more merit than he who does merit.'
- c. daradastura meTi salāmi aru sabhai-kana paralā  
so dastura timiharu-le pani cahrāvanu paralā (1766a)  
'Having done away with the custom, all others receive that privilege which you had to raise cattle.'
- (36) a. pāpa garāuNiya hota ta pāpa garNiya-lāi pāpa adhika hūcha (1723)  
'He who sins sins more than he who causes sin to be done.'
- b. 25 jāna oD mahal ciThnyā-lāi gāta jāgyo (1751)  
'25 men were employed to lay bricks.'
- c. tesa kurā-mā tā-lāi dosha chaina (1770)  
'You aren't guilty in this matter.'
- (37) ... abhogyā dharālā-ka pariyāra manikyā jagyā dharālā-upar mayā yeśi bhaicha (1719)  
'Manike and Jage Dharala and the family of Abhoge Dharala have received such a gift.'
- (38) 7 rupiyā āglā 7 viśa rupiyā 53 Thān kapadā ukildāra-tira lāgyā (1751)  
'The overseers received 7 rupees each for a total of 140 rupees and 53 thans of cloth.'

5.2.2. IOs in this period are found marked by kana (39), lāi (40), and Ø (41), the first two being the most frequent.

- (39) a. tāhā-māhā jo viśveśvara-ko pujā gara us-kana pacasa pāthi dhāna dinu (1712)  
'Give 50 pathis of rice to whomever worships Vishveshvar in there.'
- b. vahiNi-kana prasāga garnyā (1723)  
'to have sex with a younger sister'
- c. vaniyā-kana ajnāna-mahā kshatriya-ko ādhā diNu (1723)  
'to give half a kshatriya's share in ignorance to a merchant'

- d. rogi manushya-kana cillā-ko ajirNa mugi-kā curNa-le harcha (1752)  
'The powder of lentils cures indigestion from oily foods  
for a sick man.'
- e. estā śri rāmacandra-kana namaskāra gari (1773)  
'having greeted Ramacandra in this way'
- (40) a. ... kulo-ko pāni sabai-lāya vādikana aghikā paidā-sito  
leno (1714)  
'Take that which was produced first after distributing  
to all the water from the canal.'
- b. śudra-lāi ajnāna-mā vaiśya-ko ādhā ... dinu (1723)  
'to give half the share of a vaishya in ignorance to a shudra'
- c. nāladuma kāThmaDaū-lāi dikana (1755a)  
'having given Naladum to Kathmandu'
- d. tyo hāti mahuta-lāi lāyera (1774)  
'having brought the elephant to the Mahout'
- (41) a. ... suratha sāha-le yo resha mānikyā ra jagyā dharālā  
vaksyo (1719)  
'Surath Shah gave this authority to Manike and Jage Dharala.'
- b. svamātā prasāga garnu (1723)  
'to have sex with one's own mother'
- c. hāmi dhevā svaddhachāū (1766b)  
'We shall ask the Dhewas.'

5.2.3. The set of postpositions used to mark DOs is the same as that for IOs--kana (42), lāi (43), and  $\emptyset$  (44). However, unlike IOs, DOs are found marked by  $\emptyset$  as often as marked by kana or lāi.

- (42) a. nāgi stri-kana dekhnu (1723)  
'to see a naked woman'
- b. ... dhanadatyā nevāra-kana hiyo hāmi-le pakrikana  
viśvamitra miśra-lāi vaksyāko ho (1768)  
'Having captured Dhanadatyā the Newar yesterday, we gave  
him to Vishvamitra Mishra.'
- c. rāvaNa-kana māri (1773)  
'having killed Ravana'

- (43) a. mitra-lāi māṛnu (1723)  
'to kill a friend'
- b. kaski-lāi choḍi gorkhā-le kahā jānu cha (1755b)  
'Having left behind Kaski, where can Gorkha go?'
- c. testā saidhuvā-lāi rāshya pheri dhāmadhuma holā (1767)  
'Having placed the rebels there, again there will be a revolt.'
- (44) a. kheta vecano bhaya-dekhi rājā janāpano cāḷcha (1714)  
'After selling the field, it is necessary to inform the king.'
- b. esai-lāi chori diṅu (1723)  
'to give a daughter to someone'
- c. yahā-vāṭa bhalā manisa paThāūchāū (1755b)  
'We shall send a good man from here.'
- d. vaḥā-ko māhuta kamāikana (1774)  
'having hired the Mahout from there'

5.3. The data presented in this section show individual variation in the object-marking strategies for KOs, IOs, and DOs. All three share kana and lāi; IOs and DOs also use  $\emptyset$ ; KOs occur with upar and tir. IOs and DOs while similar in postpositions used differ in the frequency of the use of  $\emptyset$ . So, we cannot say that any two objects have exactly the same encoding strategy.

## 6. Object-Marking 1775-1850

6.1. During the period from 1775 to 1850, we find that KOs, IOs, and DOs are marked with lāi and kana (DOs are sometimes found with  $\emptyset$ ); however, marking strategies vary from text to text. Usually KOs will be marked by lāi; IOs by kana and lāi in roughly equal proportions; and DOs are marked by kana somewhat more frequently than by lāi.

This change in the progress of the convergence coincides with a change in the political and social structure of Nepal, for by 1770, Prithvīnarayan Shah, the king of the city-state of Gorkha, had conquered what is now western and central Nepal, including the three dominant Newar city-states of the Nepal Valley. His successors during the next 40 years would extend the boundaries of their kingdom to its present borders. Nepali, as spoken in Gorkha, would have become the political and dominant social language in all parts of the country. The effects of this social change may also have speeded the progress of object-marking convergence.

6.2.1. In the texts from this period we find much variation in the possible distribution of object-markers. In the Dibyopadesh (c. 1780) of

Prithvinarayan Shah, for example, we find lāi used exclusively for KOs (45) and IOs (46), while DOs are marked by lāi (47) and  $\emptyset$  (48).

- (45) a. ma-lāi āsarje lāgyo  
'I was amazed.'
- b. ma-lāi yavaTā kurā-ko sādhyaha lāgi rahecha  
'I'm still wondering about this one thing.'
- (46) a. tina-lāi volāhāTa-ko rukā leshana jaisi  
'as if to write a summons to them'
- b. tin jāta-lāi pahāDa ām phadarapha pani kasai-le na sholnu  
'Don't let anyone open the mountain to those people for general coming and going.'
- (47) a. usai velā-mā ma pani vimajyāu ra bhanu jaisi  
kulanandra jaisi pujaheri rana-lai Dākya ...  
'At that time I summoned Vimajyau and Bhanu Jaisi, Kulanandra Jaisi, and Pujaheri Rana.'
- b. tava rājā-le sevaka-lāi ghar-mā na mārnū  
'Let not the king beat a servant in the house.'
- (48) teri chori sivarāma basnyāta-ko choro keheresi vasnyāta-lāi deu  
'Give your daughter to Kehersi Basnet, the son of Shivaram Basnet.'

6.2.2. In other texts there is more variation in what marking is allowed. KOs, however, use lāi almost exclusively; the only example of a KO marked with kana that I've found is in the Ramayana of Bhanubhakta from about 1850 (49b).

- (49) a. tyo pratyupakāra-ko ichā ma-lāi chaina (1823)  
'I don't desire the service be returned.'
- b. ma-kana ta milyo rājya vana-ko  
'I found a forest kingdom.' (cited in Bhattarai 1976:473)

IOs (50) and DOs (51) can both be marked by lāi or kana:

- (50) a. kaun taraha-ko cija vastu vanāi dinyā ho  
so ma-kana ajna gara (1823)  
'Whoever can give me such a thing may command me.'
- b. jo rām-ko vaDhiya kathā ma-lāi praśna garyāthyau tyo kathā  
timi-lāi estā prakāra-le mai-le varNana garyā (1833)  
'I described to you in this way that good story of Ram about which you asked me.'

- (51) a. tara mā tes-lāi kahile dekhnu pāḍainū (1819)  
'But I'm not allowed to see her.'
- b. aputri putraheru-kana pāḍacha (1833)  
'The childless get sons.'

6.2.3. In the Vetalapañcaviṃśati (Riccardi 1971), we can examine KOs, IOs, and DOs--from about 1825--in a fairly large corpus. In this work, kana is used to mark animate objects:<sup>15</sup>

- (52) a. bikramakeśari-kana kasai eka ghora purusha-le hari li (VF 15-16)  
'some terrible being having taken away Bikramakesari'
- b. mrtaka li āyākā rāja-kana dekhi (V25, 1)  
'having seen the king bringing the corpse'

kana is also used to mark some IOs:

- (53) a. kshāntiśila nāmā aghori-kana pranāma gari (VF 151-52)  
'having done obeisance to the ascetic named Kshamtishila'
- b. bhuta-preta-piśāca ityadi-kana ānaṃda dinyā (VF 125)  
'giving pleasure to all sorts of ghosts, spirits, and demons'

On the other hand, lāi is used as the marker of other IOs (54) and all KOs (55).

- (54) a. tasartha timi-lāi betāla-sadhana-bidya ma diṃchu (VF 36)  
'Therefore, I shall give you the knowledge of how to summon vetalas.'
- b. estā estā ratna chattisa saya eka 3601 timi-le ma-lāi  
caDhayau (VF 70-71)  
'You've offered me 3601 of such jewels.'
- (55) a. tasartha tyo bidya ma-lāi cahidaina (VF 42)  
'Therefore, I don't want that knowledge.'
- b. arka-lāi duḥkhā parda (VF 75)  
'others being sad'

The data from the Vetalapañcaviṃśati suggest there is some stylistic variation among texts of this period in the use of lāi and kana. Some texts use lāi only, others may limit the use of lāi or kana to certain environments. This period represents a stage in the evolution of object-marking in which speakers recognize the lāi/kana variation as a



marker of stylistic variation, whereas in the early 18th century, the distinction appeared to be a lower-level syntactic phenomenon.

6.3. In this section, we have seen that lāi is almost dominant for KOs in this period. IOs and DOs both may be marked with lāi or kana, and DOs may be marginally marked with  $\emptyset$ . In this period, it appears there is stylistic variation in object-marking, because texts vary in their object-marking systems.

## 7. kana in Modern Nepali

We have seen that kana was a strong competitor for lāi during the 18th and 19th centuries. Today, it is seldom mentioned as an object-marker, except in the most complete texts.<sup>16</sup>

In recent grammars there is no question that lāi is the postposition to be used with KOs, IOs, and DOs; if kana is mentioned, it is usually in another context. Turner 1931 glosses kana as being equivalent to lāi. Bhattarai (1976:473) mentions kana in his discussion of the karma karaka 'object case.' He states that kana is found sometimes only in poetry, but that it was used in older forms of the language for both poetry and prose.

Verma and Sharma (1979:15) mention kana only in its use as a conjunctive participle:

(56) ma bhāt khāikana gaẽ 'I left after eating.'

The conjunctive participle in Nepali is formed by adding -i or -era to the verb stem, but -i+kana is an alternative. It seems to be the fate of kana to be subsumed in this form, for Sharma (1980b:104) states that these participles are "stem + ikana." When this reanalysis is complete, kana will have virtually disappeared.

## 8. A Case of Syntactic Diffusion

From the preceding array of examples, we can see that between 1700 and 1900 lāi became the dominant object-marker in Nepali, gradually increasing its frequency and possible environments. We also find that the object-marking strategy of the language underwent a radical change from a stage at which each grammatical relation was marked with its own set of postpositions to the current stage in which all three use the sole object postposition lāi. The progress of this change is illustrated in Table A on the next page. (Table A represents the data as presented here--further research may suggest a more finely-graded sequence.)

Table A reveals that of the three possible paths of convergence we predicted for lāi-marking the third hypothesis is the correct one. There is a chain shift pattern in which lāi dominates first KOs, then IOs, and then DOs. As lāi became more dominant, alternative postpositions receded to marginal usage. Obviously, the change did not complete itself for any one grammatical relation before moving on to the next; rather, it was affecting all three in various degrees at any one time.

	<u>KO</u>	<u>IO</u>	<u>DO</u>
pre-1700	lāi/kana/upar	kana/√/∅/(dat)	kana/√/∅
1700-1775	lāi/kana/(upar)/(tir)	lāi/kana/(∅)	lāi/kana/∅
1775-1850	lāi/(kana)	lāi/kana	lāi/kana/(∅)
post-1850	lāi	lāi	lāi/(kana)

Progress of lāi in Nepali  
(Parentheses denote marginal usage)

Table A

Thus, examining the grammar of Nepali at a particular time prior to 1850 should give a picture of much variation in object-marking, like the views of change in progress presented by Labov 1963 or 1966.

The chronological profile of Table A illustrates the syntactic equivalent of the progress of phonological change in the theory of lexical diffusion. The work of W. S-Y. Wang, C-C. Cheng, M. Chen, and H.I. Hsieh on Chinese dialects (cf. Chen and Wang 1975 for summary and references) has shown that a sound change diffuses gradually through the grammar and gradually expands its domain to a greater number of lexical items, eventually applying in all possible environments.

In the history of Nepali, we find "syntactic diffusion" of an object-marking encoding strategy for KOs, IOs, and DOs. lāi is reanalyzed as the only object-marker rather than a variant, and these three grammatical relations are reanalyzed as being alike syntactically/semantically rather than being different. These changes diffuse through the grammar gradually over a period of two or more centuries, as lāi expands its domain from all KOs to all IOs to all human DOs. This expansion was motivated by the grammar tending to treat KOs, IOs, and DOs alike causing convergence of all three. During the period of diffusion, syntactic correspondences like VOLEX and surface structures like conjunct verbs occur which allow speakers to identify KOs with IOs and IOs with DOs, thus creating new environments for the lāi-marking rule.

As pointed out by Chung 1977, syntactic change involves just such a series of discrete changes gradually actualized in the grammar. The stages of Nepali history represented in Table A clearly show that in the 18th and 19th centuries (and perhaps before) the language was in a state of transition as the change in object-marking strategy diffused through the grammar. Similar progressions with historical stages have been shown for the Polynesian shift from accusative to ergative morphology (Chung 1977) and the loss of verb agreement in Brazilian Portuguese (Naro 1981). Also, in Nepali, Polynesian, and Brazilian Portuguese, the syntactic changes resolve clashes between surface analyses and grammatical outputs. Thus, syntactic change begins as a solution to surface reinterpretation and proceeds gradually, expanding its scope to more and more environments.

In summary, I have shown that there has been a shift in the object-marking strategy of Nepali, that the motivation for this shift seems to have been to treat certain grammatical relations identified in surface structures more alike, and that the change diffused gradually through the grammar, expanding its domain over a period of several centuries.

## NOTES

<sup>1</sup>For further information on the uses of lai, see Verma and Sharma (1979:38ff.)

<sup>2</sup>I've also assumed that one can always tell the difference between IOs and DOs; especially among speech act verbs, there may be alternate judgements.

<sup>3</sup>For further examples, see Central Hindi Directorate (1975:38ff.)

<sup>4</sup>In presenting his examples, Turner uses the Royal Asiatic Society transcription plus modifications. The data in (10) have been normalized with Roman transcription.

<sup>5</sup>Cf. Hale and Buck (1966): accusative of feeling \$352; dative of agency \$373; dative of possession \$374; dative of direction \$362-64.

<sup>6</sup>Cf. Delbrück (1968): genitive/dative of sickness and illness pp. 5-6; genitive/dative of possession pp. 144-45, 161-62.

<sup>7</sup>Most of the Nepali data is from short selections or inscriptions in Pokharel 1975. These have been referenced by date only and are listed in the primary sources by date also. In each example, the relevant grammatical relation is underlined. The data is given in strict romanization of Pokharel's text.

<sup>8</sup>These constructions may also be found with an agent phrase:

a. yiti kshekā māhārāja-le mahyā bhaicha (1591)  
'Such a compound has become a gift through the king.'

b. muktisāhi silimsāhi māhārājā-vāTa mayā bhaicha (1591)  
'This is a gift from King Mukti Shah and King Silim Shah.'

<sup>9</sup>The grammatical theory in which we examine these objects may influence how similar or how different we believe these three to be. A grammar of Old Nepali would not be motivated to group KOs, IOs, and DOs together, while a grammar of Modern Nepali would find such a grouping valuable. I doubt that my analysis will avoid such problems, but it provides a useful framework in which to discuss these objects without a dependency upon surface roles. It is not intended to explain all areas of Nepali syntax.

<sup>10</sup>Shibatani 1977 has shown that certain rules of Japanese refer crucially to grammatical relations, while others refer crucially to surface case-roles; thus, any grammar must take into account more than one level of NP-hood. Although I shall not be discussing such rule domain here, this method of analysis can yield some insights into similarities among the three Nepali NPs.

<sup>11</sup>Cf. Kachru 1978 for conjunct verbs in Hindi.

<sup>12</sup>The following sentences in this section are taken from Abdulky 1974: p. 69 (30b); p. 70 (30a); p. 83 (34a); p. 85 (24a), (24b), (26); p. 86 (25); p. 88 (31a), (31b), (32a), (32b); p. 121 (23b); p. 122 (24c). She, too, uses a phonetic transcription which I have normalized to conform with my other data.

<sup>13</sup>Although Abdulky 1974, Turner 1931, and Verma and Sharma 1979 gloss sentences with pairs like bhok lāgnu and bhokāunu/ ris uThnu and risāunu with the same meaning, there is probably some difference in their semantic interpretations or pragmatic uses or both. As pointed out to me by Rajeshwari Pandharipande, such pairs in Marathi do show such differences. This would mean that the correspondences represented by VOLEX only occur on the syntactic level, and that on a semantic or pragmatic level these sentences would not correspond. Further research will reveal what the relationship between these pairs on all levels really is.

<sup>14</sup>For discussions of ergativity in Nepali, see Abadie 1974, Kachru and Pandharipande 1978, and Sharma 1980a.

<sup>15</sup>Selections from the Vetalapañcavimśati are from the Frame Story (VF) or Story 25 (V25); the line numbers refer to Riccardi's text.

<sup>16</sup>The equivalent of kana is still in use in the Western Pahari languages of Kumauni and Garhwali as the dative-accusative marker, as reported by Grierson 1916.

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1581	Surti Shahi Thakur	Copperplate	PSV 34
1590	Three Jaisi	Copperplate	PSV 35
1591	Arjanya Buda	Edict	PSV 36-38
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TRANSPLANTED SOUTH ASIAN LANGUAGES:  
AN OVERVIEW

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INTRODUCTION

Research on transplanted languages (languages of the immigrants) represents one of the newly emerging and rapidly growing areas of sociolinguistic research. Stage for such research was set by the works of four scholars, Werner Leopold, Einar Haugen, Uriel Weinreich and William Mackey in the area of bilingualism and language contact in the late 1940's and early 1950's. Consequently, a large body of sociolinguistic literature on immigrant languages grew in the sixties and seventies (for references to works of the above four scholars and works on transplanted languages, see Haugen 1978). Although a great deal of work has been done on this topic in the past two decades, the scope of these studies is restricted to transplanted European languages in the United States alone. As regards the immigrant South Asian languages in the USA, no serious (socio)-linguistic work has been carried out as yet.

Several South Asian (henceforth, SA) languages have been transplanted around the world as a result of migration from Asia. The languages which have gained considerable importance in their new setting are the following: Tamil in South-East Asia; Gujarati in Africa and North America; Punjabi in Western Europe and North America; Hindi in Western Europe, South and North America, the Caribbean and the islands of Fiji and Maritius.

The work on transplanted SA languages did not begin until the seventies. In India, the work on this topic began as part of a campaign to promote the image of Hindi and Tamil as 'International languages'. Therefore, world conferences of Hindi and Tamil were organized in India and sometimes outside India. What emerged from these conferences were proceedings which contained reports on language maintenance and the teaching of these two languages around the world. Consider, for example, the proceedings entitled 'Viśva Hindi Darśan' (1975) which was released on the eve of the first World Hindi Conference held in Nagpur, India in 1975. These proceedings have a separate section on Hindi around the world. This section presents the status of Hindi in South Africa, Fiji, Trinidad, Surinam, Singapore, and the teaching of Hindi in several countries of Europe, North America, Asia and Africa. These reports are very brief (ranging from half a page to two pages) and have missionary overtones. Although these reports did not initiate any serious linguistic research on transplanted SA languages, nevertheless, they did generate some interest and awareness about these varieties, mainly in India, and opened a new channel of communication between Indian scholars and the speakers of transplanted SA languages. As a result, some journalistic articles and even one or two dissertations on the

non-native literatures of these varieties were written.

As regards other SA languages, namely Gujarati and Punjabi, no work has been done either in India or abroad. Only some remarks are offered in the studies on East Indians abroad. Also, to the best of my knowledge, no work has been done on transplanted Tamil varieties either. Therefore, in what follows I will restrict myself to the transplanted varieties of Hindi alone. It should be added that a large part of work on transplanted Hindi has been carried out primarily in the United States.

#### RESEARCH ON TRANSPLANTED HINDI: ITS NATURE AND SCOPE

The work on transplanted varieties of Hindi is still in its infant stage and can be grouped into two classes: secondary and primary studies. Before I detail the nature and scope of these studies, a note of caution is in order. In venturing to write on this topic, one is at once made conscious of a number of difficulties. In the first place, most of the studies on this topic are still in their unpublished forms. Secondly, the geographical area covered by the present study is quite vast. In such cases, the danger of omissions - especially the omission of localized studies - is quite great. In spite of the fact that all major and important studies have been included in this work to the best of my knowledge, I am not claiming a comprehensive survey. Also, this study does not include the papers presented on transplanted languages during the 2nd South Asian Language Analysis Roundtable held at the University of Illinois simply to avoid repetition since some of those papers have been included in the present volume.

#### SECONDARY STUDIES

Some of the earlier remarks about the variety of Hindi spoken in Fiji and the Caribbean appeared in a number of studies on Indian Indentureship by Verrill (1931), Neihoff and Neihoff (1960), Klass (1961), Burns (1963), Wood (1968), Tinker (1974), LaGuerre (1974) and Gillion (1977). In addition, some travelogues and missionary memoirs such as by Moister (1883), Kingsley (1871), Grant (1923) contain valuable linguistic information. These works are not only important for historical reasons but also serve as excellent sources for sociolinguistic and linguistic information such as historical background about the number of SA languages and their speakers, language attitudes, lexical borrowings, language variation, literacy and the role of Hindi in its transplanted setting.

#### PRIMARY STUDIES

The primary studies can be classified into three groups: (I) Descriptive Linguistic, (II) Pedagogical and (III) Comparative Studies.

#### DESCRIPTIVE LINGUISTIC STUDIES

Descriptive studies marked the beginning of linguistic and sociolinguistic studies on transplanted Hindi. These studies appeared primarily in the form of unpublished research papers and unpublished Ph.D dissertations. Domingue (1971) represents the first systematic and detailed attempt in this area on Maritius Hindi. To this date, it continues to be the only linguistic description of the Hindi spoken in Maritius. This study, which is



primarily restricted to loan phonology, discusses the various manifestations of Creole English and Standard Hindi in Mauritian Bhojpuri. In addition to this, the study also presents a brief discussion of grammatical innovations in this variety of Hindi. This work was followed by Mohan's excellent study (1978) on Trinidad Hindi. Mohan (1978) is primarily a morphological study of the first generation Trinidad Bhojpuri. The study is intended to serve as a reference grammar of the speech of fluent Trinidad Bhojpuri. It attempts to account for the most conservative variety of Trinidad Hindi which is spoken by middle aged and elderly Indians in rural Trinidad. Twenty five native speakers of Trinidad Bhojpuri between the ages of sixty five and ninety five years of age served as subjects. Needless to say, this study represents the only systematic grammar of Trinidad Hindi. A Ph.D dissertation on Guiana Hindi is currently in progress, which aims at the language attrition in Guiana.

A small number of research papers are also available on the topic under consideration. Siegel (1975), Moag (1978) and Tiwari (1979) deal with Fiji Hindi. Siegel's study outlines the structure of Fiji Hindi and brings out some salient characteristics of Fiji Hindi. Moag's paper presents a sociolinguistic profile of Trinidad Hindi together with the linguistic adaptation of Trinidad Indians. The primary focus of this paper is 'to recount the development of the two outstanding traits of the Fiji Indian Community, namely its linguistic unification and its retention of a communal language as a badge of cultural identity. In addition, the paper also presents a discussion on the linguistic maintenance of Fiji Indians and the indigenization of Fiji Hindi.' The paper points out the development of special contact codes (Pidgin Hindi and Pidgin Fijian) by Fiji Indians for communicating with non-Indians in the new setting. Tiwari (1979) notes the presence of Bhojpuri, Avadhi, Standard Hindi and 'Sahibi Hindi' elements in Fiji Hindi and concludes that in spite of some idiosyncratic properties, Fiji Hindi essentially derives its grammar from Standard Hindi.<sup>1</sup>

Durbin's paper (1973) represents the first linguistic study which brings out the formal syntactic changes in Trinidad Hindi. The explanation of the changes are sought in the socio-cultural changes of the East Indian Community that have occurred since the East Indians' arrival in Trinidad. The paper demonstrates that the socio-cultural changes in the community have influenced the range of functions of the language which in turn has determined the direction of structural changes in the language.

The only work of linguistic nature on Surinam Hindi has been done by Bosch. Bosch (1978) addresses itself to the problem of tense marking in the embedded sentence in Surinam Hindi. The other two studies (1978a and 1978b) focus on syntactic aspects such as verb phrases and participant reference in that language. The only account of transplanted SA languages in Africa is presented in Neale (1974).

#### PEDAGOGICAL STUDIES

Two important works of pedagogical nature are the texts on Fiji and Surinam Hindi by Moag (1977) and Huiskamp (1978)<sup>2</sup>, respectively. Besides the exhaustive nature of the Moag text, the other important features of this text are: the use of the Devanāgarī script together with the Roman

transliteration and detailed grammatical notes. The planning of lessons utilizes the concept of sequencing, which involves selection, grading, presentation and testing. The text compiled by Huiskamp constitutes a second volume of the series 'Languages of the Guianas'. This text is a part of an audio-visual course in Surinami Hindi which is modelled after "First Things First", an English audio-visual course for beginners by L.G. Alexander (London: Longsman Group Ltd, 1967). The course contains twenty lessons which are followed by word index, grammatical 'comments' and index. Following the preface is a set of instructions for students and instructors regarding 'how to make the best use of this course'. The value of the course as a pedagogical text is not much. The text emphasizes the acquisition of lexical items. The grammatical notes are very sketchy and the transliteration scheme is based on Dutch. There is no text written to teach Trinidad Hindi as a second language. Recently, the Saṅgātana Dharma Sabhā of Trinidad has introduced some texts for school-age children. The texts are modelled after the children's textbooks of the National Council of Research and Teaching with two notable changes: One, more indigenous vocabulary is introduced in the texts and two, the English transliteration of the vocabulary presented in the Devanāgarī Script is also given.

#### COMPARATIVE STUDIES

The only work of the comparative nature has been done by Durbin (1977). This work addresses itself to the problem of 'identification of a language' in general and the language of Trinidad East Indians in particular. The study notes that the identification of the specific languages brought by the Indian ancestors of the contemporary East Indian population remains 'guess work'. Employing objective comparative methods, Durbin attempts to identify the speech of Trinidad East Indians.

#### CONCLUSION

The transplanted varieties of Hindi grew in a linguistically alien, socially unfavorable and sociolinguistically complex environment. Neither its speakers nor the speakers of dominant languages in the area paid any serious attention to these varieties. In spite of the growing interest in the investigation of immigrant languages, transplanted varieties of Hindi and other SA languages still continue to be a neglected area of investigation. As such, the primary aim of the investigations carried out in the area of transplanted varieties of Hindi has naturally been to present some important demographic information about these varieties and to address themselves to the question of language identification. In addition to this, these studies devote considerable attention to the adequate linguistic description of these varieties and to the indigenization of Hindi in its new settings. The other concerns of these studies have been language maintenance and problems of language pedagogy. In short, the primary concerns of these studies have been four fold: (I) demographic information, (II) language identification and description, (III) language contact and change, and (IV) language pedagogy.

Needless to say, there are several areas open for future research in this field of investigation. A great deal of work remains to be done on topics such as linguistic variation, contiguous generational speech, lan-

guage attrition and language death,<sup>2</sup> language maintenance, functional range and typology of the transplanted varieties of Hindi.

## NOTES

<sup>1</sup>This point is open to further investigation.

<sup>2</sup>Currently a project dealing with "Trinidad Hindi: a dying language" is in progress.

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TRINIDAD HINDI: THREE GENERATIONS OF A TRANSPLANTED VARIETY

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The aim of this paper is to study the development of Hindi in the transplanted environment of Trinidad and Tobago by examining the formal and functional changes undergone by that language in three generations of Trinidad Indians. The paper is primarily divided into two parts. The first part presents linguistic and sociolinguistic settings of Trinidad Hindi (henceforth, TH). The second part is devoted to the salient linguistic features of TH and generational similarities and differences in TH.

In order to achieve the second goal, the speech of three generations of Hindi speakers is analyzed. The data consists of a text of about seven to ten hours of taped conversation among ten Trinidad Indians, representing three generations. In addition, data on retroflexion and aspiration was also collected by means of giving a production and perception test, consisting of thirty occurrences of retroflex consonants and fifteen occurrences of aspirated consonants to approximately thirty-five subjects.

Our investigation has shown that contrary to the diffident characterization of their competence in Hindi by the speakers of Trinidad Hindi, their competence goes beyond 'a few words'. Although the third generation has suffered heavy language attrition because of adopting a more simplified version of the older generation's grammar, the loss of some features and the retention of others is not arbitrary. They tend to retain only the prestigious or more standard forms. This marks a radical departure from the first generation which tends to favor native dialect forms.

0. INTRODUCTION

In recent times, a new dimension which is frequently termed as 'language death/attrition' has been added to the studies on language contact and bi-(multi-)lingualism. The two main settings in which the phenomenon of language death/attrition has been frequently studied in recent sociolinguistic literature are the transplanted/immigrant languages and the indigenous minority languages. Some noteworthy studies on this topic are by Dressler (1972), Dorian (1973, 1980) and by several others (See Dressler and Wodak-Leodolter (1977)). These studies primarily dwell on the various sociolinguistic aspects of language death/attrition. The present study is a step in this direction by way of examining the development<sup>1</sup>/decay of Hindi

in the transplanted environment of Trinidad and Tobago. The paper examines the formal and functional changes undergone by that language in three generations of Trinidad Indians and is primarily divided into two parts. The first part presents the linguistic and sociolinguistic setting of Trinidad Hindi (henceforth, TH). The second part is devoted to the salient linguistic features of TH and generational similarities and differences in TH. In addition to providing a necessary background for TH, the inclusion of the first part is also crucial to gain understanding of why TH developed the way it did and why there is a discrepancy between the 'self-reported' competence and the 'actual' competence on the part of TH speakers.

## I. LINGUISTIC AND SOCIOLINGUISTIC SETTING OF TH

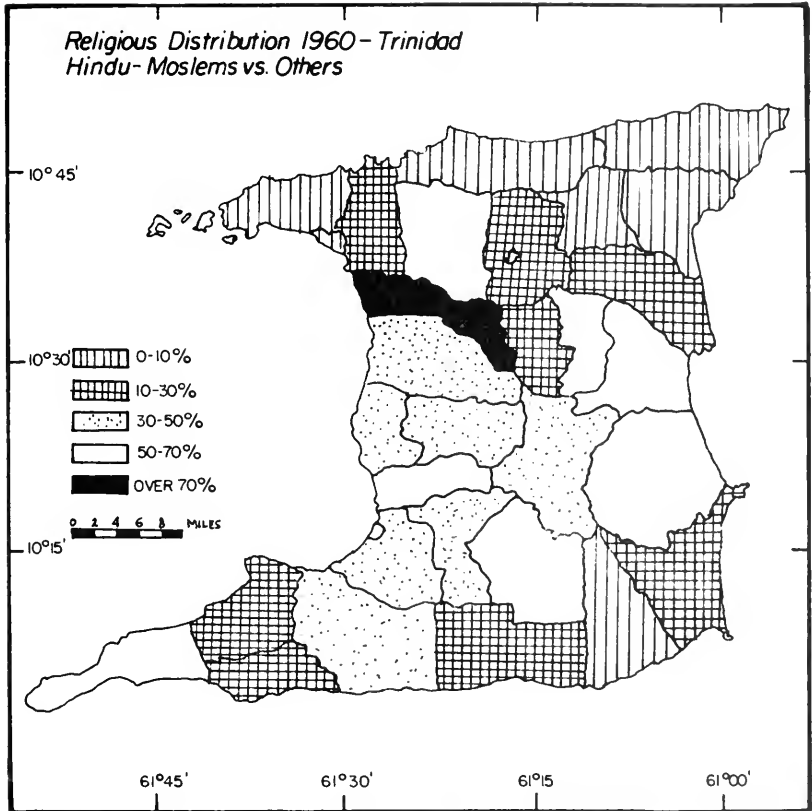
Trinidad identifies itself as a monolingual nation with English as its only official language. The failure to recognize other languages has resulted in serious linguistic neglect. This is seen in the fact that even basic questions such as how many languages are spoken in Trinidad and what the number of their speakers is remain either unanswered or inadequately answered. Pointing out this serious gap, the West Indies Census (1946) noted that

"In British Guiana and in Trinidad and Tobago the census did not investigate language. This would seem to have been an important omission, since the high illiteracy there among the East Indians points to an unfamiliarity with the English language and, it may be concluded that languages other than English are in wide spread current use both among East Indians and West Indians."

West Indian Census (1946:43-44)

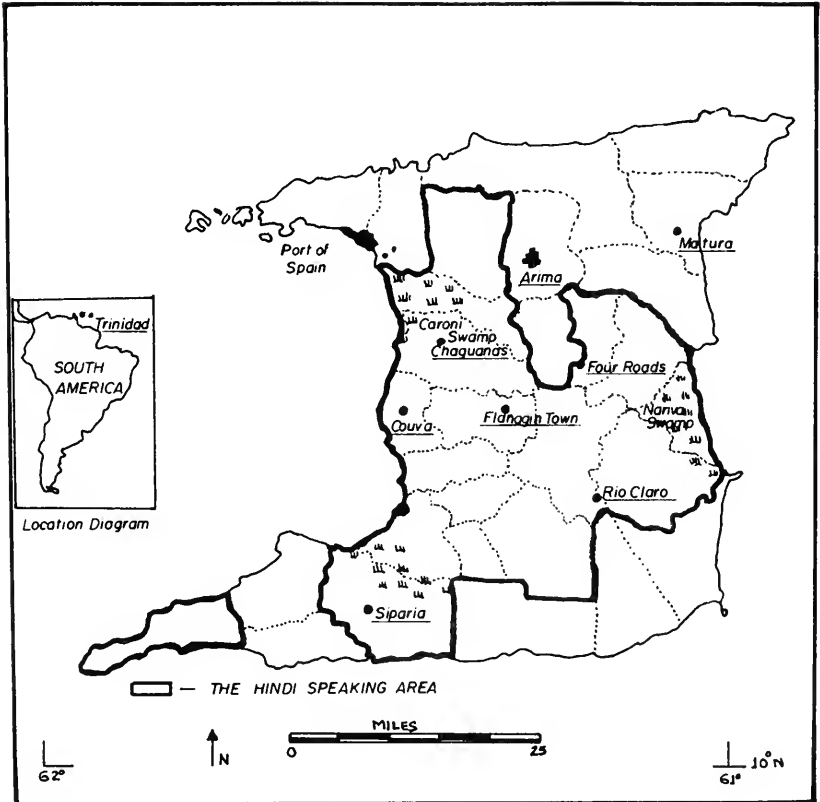
In spite of this reminder, such omission continues and information on languages is not collected to this date in Trinidad. In the absence of such information, investigators have to rely on indirect means to analyze the linguistic situation of Trinidad. In this paper, I have utilized such indirect evidence to abstract demographic information about TH.

In Trinidad, Hindi is predominantly spoken in areas such as Caroni, Couva, Chaguanas and San Fernando. On the basis of the concentration of Hindus and Moslems in these areas (see Map 1), it appears that approximately two thirds of the area of Trinidad can be characterized as a 'Hindi speaking area', shown by heavy lines in Map 2. (Map 2 identifies the areas plotted on Map 1.) This presents the most conservative picture of the Hindi speaking area, for Hindus and Moslems are not the only ones who employ Hindi as a significant number of the East Indian Christian Community also uses Hindi as the first or second language. The validity of these observations can be supported further by a survey of the linguistic background of primary school children conducted by the University of the West Indies in 1969. This survey revealed that about 46% of them were exposed to Hindi at home (for details see Currington, et. al. 1974). Hence, nearly half the population of Trinidad uses Hindi either as their first or second language.<sup>2</sup>



**MAP I - RELIGIOUS DISTRIBUTION 1960**

(Compiled from 1960 Census Reports, Government of Trinidad and Tabago)



MAP 2 - THE HINDI (BHOJPURI) SPEAKING REGION OF TRINIDAD.



Hindi was transplanted by East Indian indentureship in Trinidad in 1845. By 1917, some one hundred forty three thousand immigrants, mainly from U.P. and Bihar, had arrived there. The influx of this new culture set the stage for ethnic conflict. The sentiments of the ruling white population towards the new immigrants can be summed up by the following remarks of Lord Harris:

"They are not, neither Coolies nor Africans, fit to be placed in a position which the laborers of civilized countries must at once occupy."<sup>3</sup>

The African population also looked upon the Indians as the new slaves. Since today East Indians and Blacks represent the main ethnic groups of Trinidad Society, the historical rivalry between the two groups remains salient and can be seen in developments where Hindi vocabulary items such as bāp 'father' and indrānī<sup>4</sup> 'wife of Indra, a female name' have developed derogatory connotations in black speech.

Historically, Hindi played two important roles in the multi-cultural and multi-racial setting of Trinidad. One, it served as the ethnic language of the diverse East Indian Community. Second, it acted as the primary promoter of literacy among East Indians: 80% of the East Indian population came to Trinidad from the rural areas of North India where English education was negligible, hence the parents and the children of the immigrants shied away from formal English education. Also, the government and the planters took little interest in their education in the earlier periods. However, the rate of literacy improved significantly when the Canadian Presbyterian Church employed Hindi as a medium to promote Christianity, literacy and education among East Indians. Basic textbooks were written and printed in the Hindi language by the Canadian Mission Press at Tunapuna.<sup>5</sup> This strategy of achieving literacy (and conversion) through the regional language, Hindi, proved extremely rewarding and the success of the church set an example for Surinam and other countries.<sup>6</sup> In 1890, special East Indian schools were set up in which every teacher was required to know both English and Hindi.<sup>7</sup> Currently, there are more than forty volunteer organizations which teach Hindi as a second language in Trinidad. In short, even in a linguistically unfavorable environment, Trinidad never broke away from the Hindi language.

It is a well known sociolinguistic phenomenon that in bilingual or multilingual societies, languages tend to adopt complementary roles. Since English has taken over the important role in education, Hindi has given up this role in Trinidad. That explains why the younger generation is gradually giving up Hindi in favor of English.

In spite of this language shift, Hindi still serves its role as the ethnic language and is still the main channel for the preservation and transmission of Indian culture. Although Hindi provides membership in the East Indian group, it is not to say that Hindi is used by all East Indians in every setting. Yet for intimate or informal conversation, Hindi is preferred by educated and non-educated speakers alike, whether rural or urban, whereas English is used by more educated speakers in formal settings.

The linguistic attitude of the speakers of TH is similar to the general attitude of speakers of transplanted languages towards their language. The speakers of TH generally feel that they speak corrupt Hindi. Neihoff and Neihoff (1960: 86) also observed that

"There is a wide spread feeling of inferiority among Indians towards the dialect of Hindi they speak. The occasional Hindu or Moslem missionaries or other Indian nationals that the local people hear, are widely admired for their 'beautiful' Hindi."

In addition, popular Hindi movies seem to serve as a constant reminder of the distance between their own Hindi and "real" Hindi which in turn is viewed as the model for their own Hindi. As a result, the language of Trinidad Indians has registered several changes in favor of standard Hindi. Such changes are readily apparent in the lexicon and syntax of TH (See Durbin, 1973).

So far I have used the term TH for the speech of the East Indians of Trinidad. The term TH does not imply that there is complete homogeneity in the use of Hindi in Trinidad. There is wide variation in TH: variation that can best be characterized as a continuum. On the one end of the continuum lies Bhojpuri which still has a minority of monolinguals adhering to it. In the middle is the Creolized Hindi whose speakers are in overwhelming majority. The other end of the continuum is represented by a near standard Hindi of the type: ve ne kahā 'he said'.

## II. THREE GENERATIONS OF TH

As was pointed out earlier, several factors such as a lack of demographic information about languages and linguistic variation blur the linguistic picture of Trinidad. The case of Hindi is particularly complex since Indians who admit to knowing "only a few words of Hindi" are sometimes quite fluent in Hindi. Neihoff and Neihoff attempted to explain the underlying reason for this paradox in their verbal behavior. They remark,

"It is our impression that most of these people believe that their Hindi was so 'bastardized' that they could not honestly consider most of it as true Hindi at all"

Neihoff and Neihoff (1960: 86)

This paper seeks to study the actual as opposed to the self-reported knowledge of Hindi by Trinidad Indians. For this purpose, the speech of three generations of Hindi speakers is analyzed and their similarities and differences are examined.

## DATA

The data consist of a text of about ten hours of taped conversations among ten Trinidad Indians, representing three generations. The data were collected during my trip to Trinidad in the month of December 1979. In addition, data on the production and perception of retroflexion and aspiration, the two defining features of Hindi, was also collected by means of

giving a production and perception test, consisting of thirty occurrences of retroflex consonants and fifteen occurrences of aspirated consonants to approximately thirty-five subjects. These tests aimed at testing the hypothesis that TH is losing its phonemic and phonetic sensitivity to retroflexion and aspiration because of its contact with English (Creole).

#### SUBJECTS

The following subjects participated in the recording sessions.

Generation I ( $G_1$ ):  $G_1$  consists of subjects born in India, ages 59 to 80. Mr. Chotkan Lalu (age 77) arrived in Trinidad by ship in 1913. Mr. Ramdin Hetlal, (age 75), is currently a resident of the Claxton Bay area. The only female member of the first generation represented in our sample was Ms. Rukamani.

Generation-II ( $G_2$ ): The middle generation consists of Mr. Sunderlal whose parents came to Trinidad on the last ship in 1917. The other two members representing this generation were Mr. Basand Shukla (42, resident of Claxton Bay) and Mr. Dal Chand Musai (35, resident of Aleivao).

Generation-III ( $G_3$ ): subjects were primarily BA or BSC students at the University of West Indies at St. Augustine. They were between the ages of twenty and twenty-five years. Ms. Devi (Siewrettan area), Ms. Shanta (Arima resident), Mr. Hamid (Diego Martin) and Anjani (21, Cottage Village) were the representatives of the third generation.

The subjects were selected for their willingness to take part in the recording. No other special criteria went into the selection of the subjects. Such an approach did not cause any serious sampling inadequacy for our study since the population under investigation does not exhibit the high degree of heterogeneity, social class complexity and mobility of the urban population. In addition, the reliance on volunteers was imperative since the study also aimed at obtaining older dialect forms before they become extinct (See Trudgill 1974: 20).

#### ELICITATION TECHNIQUES

The elicitation techniques were essentially the same as described in Labov (1966). Two complimentary methods were used to abstract data for this study. The first technique employed was group narrations, discussions, or free conversation among each of the three groups. Since the subjects were familiar with each other and were motivated to participate in this study, no special problem was encountered.

The second method of elicitation was personal interviews employed after speech samples obtained in the group discussions were tentatively analyzed. These had two aims: One, to test the hypotheses suggested by the preliminary analysis. Two, to fill gaps in the data collected.

#### SALIENT FEATURES OF TH

An analysis of our texts reveals the following salient features:

The first important characteristic of TH is the different use of

retroflexion and aspiration from Standard Hindi. The use of aspiration in TH differs in three important respects: One, aspiration is introduced word initially or word finally in those instances which do not have aspiration as is exemplified in (1) below:

- |     |      |              |     |                      |
|-----|------|--------------|-----|----------------------|
| (1) | caṅā | 'chick peas' | --- | → c <sup>h</sup> anā |
|     | dāl  | 'lentil'     | --- | → d <sup>h</sup> āl  |

Several other examples such as phagrī 'turban', sabh 'all' further support the claim that the feature of aspiration is over-generalized in TH. Not only this, aspiration and retroflexion are considered to be the defining features of Hindi by Trinidad Indians. That explains why even the basic vocabulary items are not free from aspiration. Such a practice of different use of aspiration and retroflexion is more frequent among the third generation of Hindi speakers of Trinidad. Second, aspiration is dropped in some instances. For example, words such as jhīl 'lake' become jīl in TH. Third, it is important to note that the phonetic correlates of retroflexion in TH are different from those of Standard Hindi. Retroflex sounds are generally labeled as 'rolled' sounds by Trinidadians. In the Trinidad variety, although the tongue is rolled, sufficient muscular tension is not created. Also, the point of articulation is fronted. That explains why the nature of so called rolled or retroflex sounds are distinctively perceived by native speakers of Standard Hindi.

Another important characteristic of TH is the loss of gender, number and case agreement in noun phrases as exemplified in (2) and (3).

- |     |                     |       |                 |
|-----|---------------------|-------|-----------------|
| (2) | baṅā                | xarāb | cīz             |
|     | big/very (Masc. Sg) | bad   | thing (Fem. Sg) |
|     | A very bad thing.   |       |                 |

choṅā	larkā
little (Masc. Sg)	boy (Masc. Sg)
A little boy	

choṅā	chorī
little (Masc. Sg)	girl (Fem. Sg)
A little girl	

- |     |               |
|-----|---------------|
| (3) | rāstā ke pās  |
|     | path of near  |
|     | Near the path |

baniyā ke sāth
Baniya of with
With the Baniya.

- |       |               |
|-------|---------------|
| *(3a) | rāste ke pās  |
|       | Near the path |

baniye ke sāth
With the Baniya

Example (2) shows that gender agreement is lost within the noun phrase. This is related to the loss of grammatical gender in TH. The logical gender is

either expressed morphologically or by employing different lexical items.<sup>8</sup> The grammaticality of phrases such as (3) and the ill-formedness of (3a) indicate that oblique case is lost in TH.<sup>9</sup> The examples of the loss of number agreement in noun phrases and the loss of pronominal forms are given in Durbin (1973) and Mohan (1978), therefore, I will not repeat them here. What is of interest to note is that such loss of gender, number and case agreement is characteristic of non-native varieties of Hindi spoken in India as well.

The phenomenon of language simplification manifests itself in several forms in the variety of Hindi under discussion. I am using the term 'language simplification' in the sense of 'simplified registers' - reductions of a source language - as employed by Ferguson (1975) and Ferguson and DeBose (1977) in the treatment of 'Baby Talk'. One such simplification worth noting is the reduction of paradigms in TH. Consider the future tense paradigm of the verb 'to come' in TH given in (4)

(4) Future paradigm of the verb 'to come'

1st person: sg/pl	āib
2nd person: sg/pl	aibe
3rd person: sg/pl	āi

When we compare this paradigm with the Indian Bhojpuri paradigm which has eighteen inflexional forms, it becomes clear that there has been a substantial reduction. This reduction involves factors such as elimination of honorific inflection in the 2nd and 3rd person, loss of singular vs. plural distinction and loss of feminine inflexional forms in TH. (For details See Mohan, 1978).

The regularization of irregular verbs has also contributed to simplification of TH. Our data show that almost all the subjects tend to regularize verbs such as denā 'to give' and lenā 'to take' in the imperative and karnā 'to do' in the polite imperative.

Borrowings and innovations in TH mark its independent development. The primary source of borrowing for TH is English Creole. As a result, it has developed the following unique lexical and syntactic properties:

Plantation vocabulary and lexical innovations such as those given in (5) are a natural result of language contact.

(5) bākulī	bonded collee
kulambar	European overseer
bārak	labourer quarters
sardār/driver	Indian headman of labourers
suplāi	replacing dead plants with new

Needless to say, such coining occurred during the indentured period, and some of these terms are unintelligible to the native speakers of Hindi in India.

Other outstanding characteristics of TH is reverse word order in compound verbs (6 and 7) and the introduction of a new class of compound and

complex verbs with English nouns followed by Hindi verbals (8).

- (6) hamār beṭī ke bihā jālā howe.  
our daughter of marriage will go happen  
Our daughter's wedding will take place.
- (7) u dān gail jel  
he done went jail  
He has already gone to jail.
- (8) fāit̄am kar 'fight'  
ṭepam kar 'tape'  
lāikam kar 'like'

Notice that the word order of compound verbs in Indian Bhojpuri is howe jālā, i.e. happen will go. The reverse order of compound verbs in TH as exemplified in (6) is due to the influence of English Creole which has just the opposite word order in compound verbs. Example (7) indicates that TH has developed a set of new classes of compound verbs. The operator cuknā is often replaced by Creole dān 'done' in Trinidad. As a result, compound verbs such as dān jānā (jā cuknā in Standard Hindi) in (7) are found invariably in TH. Similarly, lexical borrowing from Creole has resulted in the introduction of a new set of complex verbs such as ṭepam karnā 'to tape', phonam karnā 'to phone', ṭrabal denā 'to give trouble'.

The reverse order and the influence of English can also be witnessed in the following sentences of TH.

- (9) apan na māge jāe  
I Neg want to go  
I do not want to go
- (10) poliīs ke sab na māge dekhe  
police to all Neg want to see  
They (all) do not want police to see (it).

In the above sentences, the higher verb 'want' and the infinitival form of the embedded verb follow the word order of English; in addition, verbs such as want do not follow the like-subject constraint as in Standard Hindi. It should also be pointed out that TH frequently employs the Creole quotative marker 'se' instead of 'bole'.

Code-Mixing/Switching is wide spread in TH. It is not only employed in day-to-day conversations but is also used in creative writing to induce realistic effects. Observe the mixing of English in the following popular Hindi song from Trinidad.

- (11) nānā nānī ghar se nikle<sup>10</sup>  
dhīre dhīre caltī hai  
badlā se dukān mī donō jā baithe  
nānā taking white one, nānī drinking wine  
nānā āge cale, nānī going behind  
nānā taking white one, nānī drinking wine

Observe an additional example:

- (12) ai rosy girl  
 hey.  
 every time I passing, you are pisaī masālā  
 'grinding', 'spices'

In examples (11) and (12), the underlined items are code-mixed from English and Hindi, respectively.

#### GENERATIONAL SIMILARITIES AND DIFFERENCES

The linguistic properties shared by all of our subjects are as follows. With the exception of some basic vocabulary, primarily those characteristics such as loss of gender, honorifics, basic vocabulary were acquired by the middle and the third generation which are induced by the simplified model of Hindi adopted from the first generation of TH speakers. The generational differences are summarized in Table I.

TABLE I (Generational Differences)

G 1	G 2	G 3
<u>Wide Range of Functions</u>	<u>Declining Functions</u>	<u>Radically Declining Functions</u>
linguistic security	minimum insecurity	maximum insecurity
stylistic choices	decreased choices	no choice
maximum fluency	adequate fluency	least fluency
Devanāgarī script	Roman	Roman
borrowing	code-mixing/-switching	code-switching
large Hindi vocabulary	large Creole vocabulary	loss of Hindi vocabulary
specialized vocabulary		St. Hindi/English vocabulary
rel. pronoun	question pronoun	question pronoun
quotative marker	Creole 'se' (say. St. English)	Hindi <u>ki</u> 'that'
perfect aspiration/ retroflexion		different aspiration/ retroflexion

Table I reveals that linguistic security among the first generation is maximum while it is minimum in the third generation. In our analysis, the two measures used to determine linguistic insecurity were: (i) hypersensitivity to stigmatized speech which Trinidad Indians themselves use, and (ii) inaccurate perception of their own speech. These two determinants are in agreement with the determinants of linguistic insecurity cited by Labov (1972). In addition, subjects often transmitted their linguistic insecurity by appending to their response expressions such as 'Do you think it is right?', 'In India people speak like this', 'I think...', 'Is it right?' The use of these expressions was maximum by the third generation and minimum by

the first. It is interesting to note that it was the lack of stylistic choices and not the great fluctuation in stylistic variation, as observed by Labov (1972: 132) in the speech of lower-middle class New Yorkers, which yields profound linguistic insecurity among the third generation TH speakers. At the phonetic level, hesitation served as another indicator of linguistic insecurity whereas fluency was treated as a marker of linguistic security in our analysis. The Devanāgarī script is maintained only by some speakers of the first generation. The following generations have primarily adopted the Roman script.

As regards the question of vocabulary stock, there are significant differences between the first and subsequent generations. The first generation primarily relies on the stock of native Hindi vocabulary whereas the third generation displays massive loss in this area. Parts of basic vocabulary such as ghoṛā 'horse', chorā 'boy', khāṭṭa 'sour', qher 'much' thoṛā 'less', sāt 'seven' were absent in the third generation. The process of language attrition did not take place randomly. It occurred systematically by retaining one or two members of a set of near synonyms. Let me give some examples to clarify the point that I am making. The first and second generations have two words qher and bahut to express the concept 'much' whereas the third generation has only bahut. Several other such examples can be cited to support this point. Out of a set of chorā and larkā 'boy', lambā 'tall' and barā 'big', kāriyā and kālā 'black', the lexical items retained by the third generation are larkā, barā and kālā, respectively. Also notice that the items preserved by the third generation are from Standard Hindi instead of Bhojpuri or any other Hindi dialect. The replacement of the quotative marker bole by the Hindi complimentizer ki 'that' is yet other evidence of Standard Hindi influence on the third generation.

The loss of lexical items together with the loss of grammatical items i.e., substitution of question pronoun for relative pronoun, present evidence that the process of language simplification is still operative in TH. Each subsequent generation has evolved a simpler variety of Hindi than the previous generation.

One of the unique features of the third generation is the loss of morphological processes. The first and second generation could relate the adjective barṅā with barā 'big'. However, the third generation could not do so.

The first generation restricted itself to lexical borrowing whereas Code-Mixing/Switching mark the important features of second and third generation speakers.

The results of our production test revealed that the use of aspiration and retroflexion is rather different and non-phonemic in the third generation. The first generation was fully aware of the phonemic distinction present in the following two sets:

- |     |      |           |    |      |         |
|-----|------|-----------|----|------|---------|
| (A) | rotī | 'crying'  | vs | roṭī | 'bread' |
| (B) | dān  | 'charity' | vs | dhān | 'paddy' |



The third generation demonstrates merely the subjective preference for retroflexion because the lexical items in question are supposed to be Indic in origin.

The results of our perception test are summarized in Figures 1 and 2. The analyses of results show that although the third generation perceives a distinction between unaspirates and aspirates and retroflex and non-retroflex consonants, their perception is not as acute as registered by the first or the second generation. Such perceptual differences seem to be the natural consequence of the unstable and non-phonemic nature of aspiration and retroflexion in the grammar of the third generation.

#### CONCLUSION

In conclusion, our investigation has shown that contrary to the diffident characterization of their competence in Hindi by the speakers of Trinidad Hindi, their competence goes beyond 'a few words'. Although the third generation has suffered heavy language attrition and has undergone the process of pidginization because of adopting a more simplified version of the older generation's grammar, the loss of some features and the retention of others is not arbitrary. They tend to retain only the prestigious or more standard forms. This tendency is due to the popularity of Hindi movies and songs (during my stay approximately sixteen theaters out of fifty were playing Hindi movies on a regular basis) and formal teaching of Hindi by some volunteer Hindi organizations. The retention of prestigious and standard forms marks a radical departure from the first generation which tends to favor native dialect forms of Bhojपुरi.

#### NOTES

\*This work was supported by the Partners of Americas grant. I would like to express my deep appreciation to Professor Michael Marge and Mr. Bernard Broadbridge. My special thanks are also due to Professors Claire Broadbridge, Lawrence D. Carrington, B. Samaroo and Kelvin Singh who assisted me in every conceivable way during my visit to Trinidad. Without their generous support, my visit would not have been as productive as it was.

An earlier version of this paper was presented at the third South Asian Languages Roundtable at SUNY at Stony Brook, May 1-3, 1981. I have especially benefited from the comments and suggestions of Professors Frank Anshen, S.N. Sridhar and Rodney Moag.

<sup>1</sup>I am employing the term 'language development' for it is free from negative connotations which terms such as 'language death' and 'language decay' denote.

<sup>2</sup>According to Dukhedín-Lalla (1974: 3), "Hindi commands the loyalty of almost half the Trinidad population." Trinidadians employ various labels such as Hindustani, Bhojpurí, Urdu, Pūrbí to characterize their speech. These labels signify their personal choice of a particular style or dialect of the Hindi language.

<sup>3</sup>British Sessional Papers 1856 XXIV. Quoted from Patricia Dukhedín-Lalla (1974: 5).

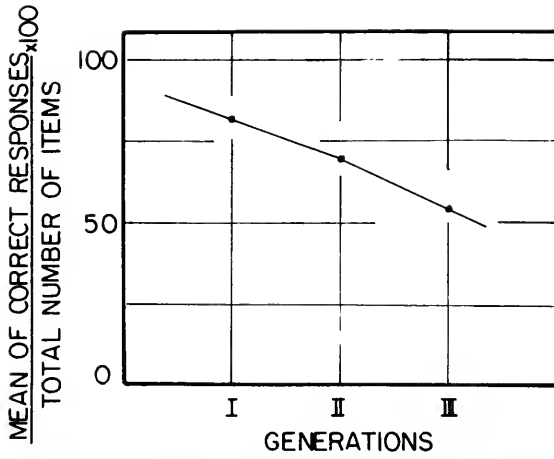


FIG. 1 - GENERATION PERCEPTUAL DIFFERENCES  
- RETROFLEXION

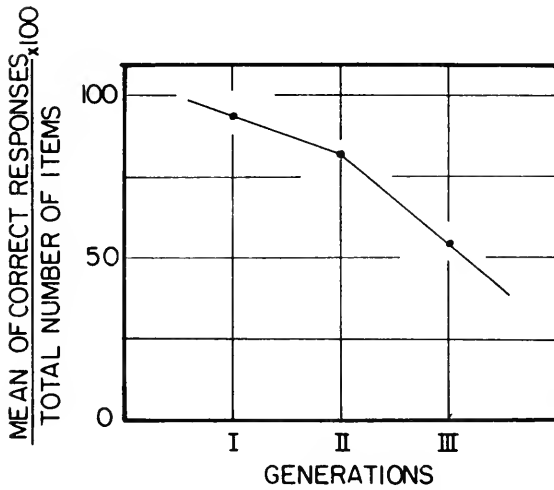


FIG. 2 - GENERATION PERCEPTUAL DIFFERENCES  
- ASPIRATION

<sup>4</sup>This word gained currency because of its use in a calypso.

<sup>5</sup>See Grant (1923: 145). Along with Dr. K.J. Grant, Rev. Babu Lal Behari who was born in the city of Dumarow, in the district of Arrah, India did pioneering work in the area of education and literacy by means of Hindi. The oldest known translational works in Hindi in Trinidad are in the forms of Lord's prayers. These translations, popularly known as 'bhajans' were carried out by Dr. John Morton and K. J. Grant.

<sup>6</sup>See McNeill and Chimman Lal (1915: 174). Hindustani was taught to school children and more than half of the school-going age children attended school in Surinam.

<sup>7</sup>'Rules under the Education Ordinance of 1840' in Trinidad Royal Gazette November 19, 1890. Quoted from Dukhedin-Lalla (1974: 10)

<sup>8</sup>To be specific, it should be added that in the case of unmarked adjectives, gender agreement within noun phrases is sometimes preserved in some dialects of TH. These dialects present evidence that the tendency of marking unmarked adjectives for the masculine gender is over-generalized in TH.

<sup>9</sup>Plural nouns in TH are marked for the oblique case. However, singular nouns remain unchanged in this case. The loss of oblique case in singular nouns can be attributed to the Indian Bhojpuri.

<sup>10</sup>This is the version used by Trinidad Christians. The version employed by Trinidad Hindus is slightly different.

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INTERNAL CHANGE IN A TRANSPLANTED LANGUAGE

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When speakers of a language emigrate en masse to a new environment and find themselves in a situation where they communicate mainly with members of their own group, the language they speak can undergo some significant internal change which is the result of the move itself and is independent of the contact situation.

The hypothesis presented in this paper is that this internal change occurred along the lines of three general principles:

1) Levelling of most dialectal differences. Bhojpuri as spoken today in Mauritius is strangely uniform. While most of the inflectional morphology of Mauritian Bhojpuri can be traced to the Standard dialect of Continental Bhojpuri, certain forms of Mauritian Bhojpuri must be related to other dialects. A great need for unification among speakers of different dialects in a new environment must have led to this levelling.

2) Reduction of stylistic options. In Mauritian Bhojpuri, the system of nominal forms is greatly reduced: only 'strong' and 'long' forms have survived. Similarly, of the three levels of honorifics found in Continental Bhojpuri, only two have endured. The lack of diversification of the society may be responsible for this loss.

3) Use of remaining dialectal differences as stylistic indicators. In Mauritian Bhojpuri, one finds remnants of earlier regional differences at the phonological level. These alternations are no longer interpreted as dialectal differences by the speakers but as stylistic options.

1. It is a well-known fact that languages spoken by groups of immigrants often undergo certain specific changes which are due to the contact with the language(s) of the country of settlement.<sup>1</sup> The scope and amplitude of this evolution varies according to the circumstances of the contact situation. Less noticed are the changes which take place in such transplanted languages not as the result of contact with other languages, but as the result of the move away from the norms in effect in the country of origin. The example chosen to illustrate this point is the specific evolution which has characterized Bhojpuri as it is spoken in Mauritius.

2. Mauritian Bhojpuri is so different from Continental Bhojpuri that its speakers are not really sure that they are, indeed, speaking that language. In fact, most of them believe that they speak some *patois* of Hindi,

very much like Mauritian Creole speakers believe that they speak a *patois* of French. This impression is conveyed to them mainly by the fact that, recently, Mauritian Bhojpuri has borrowed enormously from Creole, particularly at the lexical level. However, a number of differences between Continental Bhojpuri and Mauritian Bhojpuri cannot be assigned to contact with Creole; rather, they appear to be due to the 'move' itself, to the geographical and historical distances which have severed the links between the transplanted variety and its origins. The purpose of this paper is to discuss some of the changes which can be accounted for better by the *move* theory than by the *contact* theory.

In order to justify the hypothesis that the changes discussed are indeed innovations in Mauritian Bhojpuri, it is necessary to compare the linguistic situation at both ends of the migration. It is difficult to know what Bhojpuri was like, a century and a half ago, when the first indentured laborers left Bihar for more promising lands. This difficulty is compounded by the fact that the migration lasted almost a century,<sup>2</sup> which means that different stages of the language spoken in Bihar are represented today in Mauritian Bhojpuri. The only sources of 19th century Bhojpuri available to me have been John Beames (1868) which is concerned only with the Northern dialect of Bhojpuri, and the dialectal statements found in Kellog (first published in 1875). Since these descriptions do not vary greatly from the descriptions of contemporary Bhojpuri (mostly Tiwari's studies), I feel justified in using Tiwari's statements when no older information is available. As for Mauritian Bhojpuri, I assume that the speech of older speakers represents a state of the language from which extensive external influence is absent, since the socio-political system of Mauritius has kept the Bhojpuri speakers quite isolated until about fifty years ago. The comparison between these two varieties of Bhojpuri shows that indeed Mauritian Bhojpuri has been innovative.

To understand why such an evolution has occurred in Mauritian Bhojpuri, one must take two socio-demographic factors into account. First, the indentured laborers who came to Mauritius originated from various regions of Bihar and West Bengal, which means that they spoke different dialects and languages. Second, they all belonged to one well-defined economic group: poor and/or landless farmers. As indentured laborers in the new land, they had no choice in deciding where to live and found themselves settled on sugar cane estates, completely isolated from the rest of the population.

The argument presented here is that this socio-demographic situation produced change in the language along the lines of three general principles:

- levelling of most regional differences;
- use of remaining dialectal differences as stylistic indicators;
- reduction of grammatical alternations and stylistic options.

### 3. Levelling of regional differences.

A very striking fact about Mauritian Bhojpuri is that it does not display, according to its speakers, any *regional* variation. In that, it differs from Creole which, again according to its speakers (often the same), is diversified regionally: people can tell what part of the island a person is from just by listening to his/her Creole. The same is allegedly not

possible in Bhojpuri. This is not to say that there is no variation in Mauritian Bhojpuri: but variation is due to religious factors,<sup>3</sup> stylistic choices, and interference from Creole.

On the other hand, regional variation in Continental Bhojpuri is quite extensive. Tiwari, like Grierson, distinguishes between four main regional dialects in Bhojpuri: the Central (or Standard), Western, Eastern and Nagpuria dialects. It appears that the Central dialect contributed most to Mauritian Bhojpuri, but specific morphological and syntactic features of the other dialects have replaced their counterparts in the central dialect. The great need for unification felt by the laborers must have led to the development of a system made up of forms originating from different dialects.

From the Nagpuria dialect, Mauritian Bhojpuri has received the - first and second person possessive:

- (1) hamar, tōhar (Nagpuria and Mauritian Bhojpuri) vs. hamār, tohār  
(Central dialect)

- the third person in the past tense:

- (2) dēkhal-*ak* (Nagpuria and Mauritian Bhojpuri) vs. dēkhal-*asa*  
(Central dialect)

The form in *-ak* also occurs in Maithili, which borders the Nagpuria domain. - a distinction in the copula, which is governed by the nature of the predicate. The actual forms are different, but the process is the same.

From the Western dialect:  
the final short *i* of many lexical items is lost:

- (3) ākh, pākh (Western dialect and Mauritian Bhojpuri) vs. ākhi, pākhi  
(Central dialect)

4. Use of remaining dialectal differences as stylistic indicators. Here, we deal with phonological alternations, which can be traced to various dialects of Continental Bhojpuri and appear in Mauritian Bhojpuri as indicators of style.

The Eastern dialect trilled *r* alternates with the Central dialect retroflex *Ṛ*:

- (4) barā/barā, ghōrā/ghōrā

The Western dialect *l* alternates with the Central dialect *r* in final position:

- (5) mandil/mandir, dublā/dubar

Similarly, the Western dialect *s* alternates with the Central dialect *h* in medial clusters:

- (6) masjid/mahjid, rāstā/rāhtā

How do these alternations operate as stylistic indicators? In each pair of (4), (5) and (6) above, and similar pairs, one of the forms happens to be also the Standard Hindi form. For instance *baRā* is the lexical entry for 'big' in both the Central dialect of Bhojpuri and in Standard Hindi. In Mauritius, as, I believe, in contemporary Bihar, the forms which are identical with the corresponding Standard Hindi words have acquired prestige among the Bhojpuri speakers. In view of the statement made earlier to the effect that Bhojpuri speakers in Mauritius believe that they speak a corrupted form of Hindi, it is easy to see why Hindi-sounding words may give prestige to the speech of anyone. In addition, as Hindi is taught in many public schools attended by Bhojpuri-speaking children, Hindi-like Bhojpuri is a sign that one is educated.

The regional variation which existed in the country of origin has not survived as such in Mauritius. The specific situation of the Bhojpuri speakers on the island encouraged them strongly to strengthen their identity by doing away with distinctions based on place of origin. Only those regional features which were capable of assuming a stylistic function remained.

#### 5. Reduction of grammatical alternations and stylistic options.

Here the argument appeals to the second socio-demographic factor mentioned above: the suggestion that the migrating Bhojpuri speakers came from one of the lowest socio-economic classes of the society. Indeed, it can well be argued that such speakers did not feel much the prestigious influence of a standard or of a refined language and chose among options those which were the most normally used in their own groups. As a consequence, some of the alternations found in a more diversified society disappeared.

##### 5.1 Gender

Tiwari describes the notion of gender, in Continental Bhojpuri, as natural and not grammatical: animate nouns must be marked for masculine or feminine gender:

(7) laikā 'boy', laikī 'girl'; ghōṛ 'horse', ghōṛī 'mare'

The adjective optionally agrees with the noun: *baRī/baR ghōRī* 'the big mare'. The natural gender is also found in Mauritian Bhojpuri, but the adjective agreement rule is no longer operative:

(8) baṛā laikī 'big girl', baṛā laikā 'big boy'

In other words, a rule which is optional in Continental Bhojpuri is lost in Mauritian Bhojpuri.

Gender is also indicated in the verb in Continental Bhojpuri, which shows different endings for the masculine and the feminine. In Mauritian Bhojpuri, the feminine forms have disappeared except in the second person singular of the past tense:



- (9) tū dēkhalē 'you saw' (general and masculine)  
tū dēkhalū 'you saw' (feminine)

Even this feminine marking rule is optional and characteristic of a more archaic style.

### 5.2 Case

In Continental Bhojpuri, there exists an instrumental case marker in *-e* which alternates with the post-positional phrase construction:

- (10) būkhē/būkh sē 'out of hunger'

This alternation is not available in Mauritian Bhojpuri, where only the post-positional construction can be used.

### 5.3 Nominal system

In the Central and Western dialects of Continental Bhojpuri, the noun, and its contiguous adjective(s), can have up to four forms:

- |      |           |                |                   |                       |              |                   |
|------|-----------|----------------|-------------------|-----------------------|--------------|-------------------|
| (11) | short     | weak<br>strong | ghar 'house'<br>— | ghōr 'horse'<br>ghōrā | pothi 'book' | bar 'big'<br>barā |
|      | long      |                | gharwā            | ghorwā                | pothiyā      | barkā             |
|      | redundant |                | gharawā           | ghorawā               | pothiyawā    | barkawā           |

In Mauritian Bhojpuri, the redundant form has disappeared, and only one short form occurs:

- (12) ghar/gharwā, ghorā/ghorwā, pōthī/pohtiyā, barā/barkā

The different levels of familiarity and affection which may be expressed by the original forms of Continental Bhojpuri are consequently erased. The only function retained by the long form in Mauritian Bhojpuri is that of reference.<sup>4</sup> It can be argued that, with respect to the categories of case, gender and nominal systems, optional rules have become lost in Mauritian Bhojpuri, resulting in a simplified morphology.

### 5.4 Honorifics system

The most obvious reduction of alternations occurs in the systems of honorifics, both in the pronoun and in the verb.

- In the pronoun:

Continental Bhojpuri has up to three degrees of honorifics for the personal and the possessive pronouns. Of these distinctions, Mauritian Bhojpuri has kept only those of the second person singular:

- (13) personal: tōrā 'you' [ordinary], tōhrā 'you' [honorific],  
rāur 'your honor'  
possess.: tōr 'your' [ordinary], tōhar 'your' [honorific]

- In the verb:

The Continental Bhojpuri verbal system shows up to three levels of style for the second and third persons; Tiwari has called them *contemptuous*, *ordinary*, and *honorific*. An additional *unmarked* form exists for the first person. In Mauritian Bhojpuri, only two levels are retained: the *contemptuous* level becomes the *ordinary*, and the unmarked suffix of the first person is extended to all persons as the *honorific*. The plural forms of the past tense of 'see' show the difference between the two types of Bhojpuri:

(14)	Continental Bhojpuri	Mauritian Bhojpuri
1st	dēkhalijā (unmarked)	dēkhalisa [ordinary] dēkhalijā [honorific]
2nd	dēkhalasa [contemptuous] dēkhala [ordinary] dēkhalī [honorific]	dēkhalasa [ordinary] dēkhalijā [honorific]
3rd	dēkhalesa [contemptuous] dēkhal [ordinary] dēkhalī [honorific]	dēkhalansa [ordinary] dēkhalanjā [honorific]

In actual fact, the Mauritian Bhojpuri speakers rarely use the *honorific*, the form in *-jā*, except in the imperative:

(15) khājā 'please eat'

Regarding the reduction in the honorific systems, and particularly the loss of the more formal levels, one might hypothesize that the indentured laborers, belonging to the lower strata of society and being illiterate, had a poor command of these systems and knew mostly their lowest levels, which, to them were *ordinary*. Their need to express politeness led them, however, to adopt one marker (the wrong one though as far as the verb is concerned) as the *honorific*.

6. The situation described above calls for a discussion of the concept of internal change. One may wonder whether the making of Mauritian Bhojpuri did in fact involve the changes suggested. It could be hypothesized that much dialect mixture activity, as is common in India, was taking place in Bihar before the migration and that the laborers all spoke a common and more or less uniform variety of Bhojpuri even before they settled in Mauritius. It would also be perfectly reasonable to expect that the same laborers, belonging to a low social class, did not normally use grammatical and honorific markers which were more likely to be found in the speech of the educated.<sup>5</sup> In other words, it could be assumed that the migrating Bhojpuri speakers took with them their specific variety of the language which survived until today in Mauritius. This appears to be in contradiction with the observation that the Bhojpuri spoken by similar laborers in other parts of the world is not only quite different from Mauritian Bhojpuri but also very varied.<sup>6</sup> This, in itself, is not a sufficient argument since one is not sure that these laborers were indeed similar in social and geographical background. Our ignorance of the circumstantial details of the migration might well hide facts which would point to a

common and non-diversified origin for a majority of Mauritian Bhojpuri speakers.

The position taken here is that the argument for internal change is to be found linked to the concept of 'a language'. If a language, here Bhojpuri, is defined not in terms of the collection of its varieties but in terms of an idealization of these varieties, it is quite possible to posit for an offshoot of one of the varieties (Mauritian Bhojpuri) an idealization different from that which would be appropriate for its origins: the model for Mauritian Bhojpuri could be different from the model for Continental Bhojpuri. One can then speak of internal change when comparing Mauritian Bhojpuri with Continental Bhojpuri.

At the beginning of this article, the facts of internal change were contrasted with those of external change such as one notes in a language contact situation. The facts of internal change presented here, however, could also be considered as resulting from contact, contact between dialects,<sup>7</sup> which led to a merger. The similarity between external and internal change must stop here as there are obvious differences between the two phenomena: while, in a *language* contact situation there is little, if any<sup>8</sup> borrowing of the inflectional material,<sup>9</sup> in the *dialect* contact situation, this is mainly what happens.

Another difference between the two situations of contact is that contact between dialects decreases diversity while contact between languages may increase it.<sup>10</sup> Indeed contact between two languages can result in the emergence of a new language which differs from either of its 'parents' and which may exist alongside of them. The origin of pidgin and creole languages is often attributed to such events.

As to the reduction in grammatical and stylistic choices, they could be described as the result of an *absence* of contact, an impossibility of interaction between different levels of society since the society was hardly stratified. This again contributes to the low level of diversity mentioned. It is interesting to note that this impoverishment of traditional linguistic options in Mauritian Bhojpuri is not final. New ways of expressing diversity have been found: the phonological variations described above and the variation due to the contact with Creole.

#### NOTES

<sup>1</sup> A discussion of the contact situation between Mauritian Bhojpuri and Creole, and its linguistic results, appears in Domingue 1980.

<sup>2</sup> 1835 is usually considered as the official year in which the immigration of indentured laborers from India started. It lasted until the first quarter of the 20th century.

<sup>3</sup> Some lexical items serve to distinguish the religion/culture of the speakers. For instance, Moslems will always use kitāb and Hindus pōthī to express the concept 'book'.

<sup>4</sup> I have argued elsewhere (Domingue 1980:4) that the long form has become a definite marker.

<sup>5</sup> The optional rules discussed in the literature on Bhojpuri may, in fact, reflect this particular situation.

<sup>6</sup> According to Surendra Gambhir (personal communication), this is at least valid for the varieties of Bhojpuri spoken in Guyana.

<sup>7</sup> For the sake of this discussion, I will consider dialects to mean varieties of a language which are mutually intelligible and which are spoken inside the same political unit.

<sup>8</sup> This is of course a disputable statement which the Boas-Sapir controversy has highlighted and which is still being discussed.

<sup>9</sup> Where this material has the same inflectional - and, consequently, productive - function in the borrowing language as in the donor language.

<sup>10</sup> Contact between languages does not, however, always result in increased diversity. In fact, many studies in areal linguistics have shown just the opposite: two, or more, languages in contact often become more alike (see for instance Gumperz and Wilson 1971).

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TRANSITIVITY IN HINDI

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The purpose of this paper is (a) to point out the features of transitivity in Hindi and to argue that the concomitance of these features is essential for transitivity, (b) to demonstrate with illustrations that transitivity is a continuum on which some verbs are more transitive than others, (c) to provide evidence to show that there is a striking similarity between the features of transitivity and of causativity in Hindi, and (d) to provide evidence from creative literature to point out that the notion of transitivity is better understood if the pragmatic function of transitivity is taken into account

0. Introduction

Transitivity has been discussed both in traditional grammars as well as in modern linguistic studies for two major reasons: (i) it is one of the language universals and (ii) it plays an important role in the grammar of a language.

Traditionally, the following characteristics of the notion of transitivity have been pointed out: (a) transitivity is an ambiguous term, i.e., for Jespersen (1964:116), a verb is transitive when used with an object, and intransitive elsewhere, (b) transitivity is a property of a sentence and not only of a verb, and (c) transitivity is a property which signifies an action transferred from an agent to a patient. Several syntactic as well as semantic aspects of transitivity have been discussed in the contexts of language typology (Masica 1976), ergativity (Anderson 1977, Comrie 1978, Dixon 1977, Hock 1980, Kachru and Pandharipande 1979), Relational Grammar (Postal and Perlmutter 1974, Pandharipande 1981), and causativity (Binnick 1976, Kachru 1976, McCawley 1976, Shabatani 1976).

The purpose of this paper is (a) to point out the features of transitivity in Hindi and to argue that the concomitance of these features is essential for transitivity, (b) to demonstrate with illustrations that transitivity is a continuum on which some verbs are more transitive than others, (c) to show that there is a striking similarity between the features of transitivity and of causativity in Hindi, and (d) to provide evidence from creative literature to point out that the function of transitivity is derived from the pragmatic fact that "... as human beings we are particularly interested in the results of our purposive actions and the effects that our actions have on patients" (Lyons 1977:491).

## 2.0 The Markers of Transitivity in Hindi

Traditional grammars (Guru 1952, Vajpeyi 1959) have mentioned the following markers of a transitive verb in Hindi, i.e., (a) a transitive verb in Hindi requires its agent to take the postposition -ne in the perfective aspect (with the exception of lānā 'to bring'). For example, dekhnā 'to see' (transitive):

- (1) { ham } ne ve    sundar    ghar    dekhe  
       { \*ham }  
       we        those beautiful houses saw  
       We saw those beautiful houses.

jānā 'to go' (intransitive)

- (2) { bacce }    ghar gae  
       { \*baccō } ne  
       children home went  
       The children went home.

(b) While a transitive verb takes two participants (i.e., subject and object) an intransitive verb takes only one, i.e., subject. (c) A perfective participial of a transitive verb in Hindi generally refers to its object<sup>1</sup> rather than to its subject, while a perfective participle of an intransitive verb agrees with its subject. Compare and contrast the following perfective participles of transitive (3a) and (3b) and intransitive (4) verbs, respectively.

Perfective participle referring to the object: likhnā 'to write':

- (3a) (larḳī kī)    likhī    huī    kahānī  
       girl poss. wrote aux story  
       The story written (by the girl)

Participle referring to the subject:

- (3b) \*(kahānī)    likhī    huī    larḳī  
       (story) wrote aux girl  
       The girl who (has/had) written (the story)

girnā 'to fall'

- (4) girā huā pattā  
       fell aux leaf  
       the fallen leaf

Notice that the perfective participle of the transitive verb likhnā 'to write', likhī huī 'written', refers to the object (3a) and not to the subject (3b). In contrast to this, the perfective participle of the intransitive verb girnā 'to fall' refers to its subject (4).



## 2.1 Problems

The above features of transitivity are not adequate to define transitivity because (a) there are verbs in Hindi which express acts which involve two participants but they are not considered to be transitive, e.g.,

- (5) pasand honā 'to like'  
liking be
- (5a) mujhe vah ghar pasand hē  
me to that house liking aux  
I like that house.
- (6) yād honā 'to remember'  
memory to be
- (6a) us ko bacpan kī bātē yād hē  
him to childhood of things memory are  
He has the memory of the things about childhood.
- (7) kām honā 'for work to happen'  
work to happen
- (7a) us se kām huā  
he by work happened  
The work got done (happened) by him.

Notice that in the above examples ((5) and (6)) the verbs take two participants (i.e., in (5) the one who likes and the one which is liked); in (6) the one who remembers and the one who/which is remembered). However, these verbs are not treated as transitive, i.e., these verbs do not allow their subject to take the ne-marking in the perfective aspect, and perfective participles cannot be derived from these verbs. Similarly, (7) has two participants but the verb is not transitive, i.e., neither the marking -ne is added to its agent nor is a perfective participle derived from it.

(b) -Ne marking is optional for certain verbs, i.e., nahānā 'to take a bath', hāsnā 'to laugh', ronā 'to cry', bolnā 'to speak'.

(c) Compound verbs can be treated as transitive verbs as well as intransitive verbs depending upon the explicator in the compound verb, i.e., karnā 'to do' is a transitive verb, but when followed by bēṭhnā 'to sit' (i.e., kar bēṭhnā 'to do by mistake') it loses its transitivity. Similarly, sonā 'to sleep' and hāsnā 'to laugh' are intransitive verbs but are optionally treated as transitive verbs when the explicator lenā 'to take' is added to them.

(d) Some transitive verbs allow inanimate subjects and the -ne marking is freely added to them in the perfective aspect. However, the perfective participle is not derived from such verbs, e.g., ṭornā 'to break'.

- (8) (a) {tez hawāne }                      ghar ke darwāze {toṛ diye }  
 (b) {corne }                                      {toṛe }  
 (a) {powerful wind }                      house of doors      broke  
 (b) {thief }  
 (a) {The powerful wind } broke the doors of the house.  
 (b) {The thief } .
- (9) (a) \* (tez)    hawā ke toṛe hue darwāze  
 (b)    cor ke toṛe hue darwāze  
 (a)    The doors broken by the powerful wind.  
 (b)    The doors broken by the thief.

Notice that in (8) both subjects, i.e., animate and inanimate, take the -ne marking. However, the perfective participle does not refer to the inanimate subject (9a), but refers to the animate subject (9b).

(e) More often than not, transitive verbs are related (morphologically or semantically) to their intransitive counterparts. The above facts suggest beyond doubt that in order to understand/interpret the above facts (i.e., a-e) and to clearly define the link among them, it is necessary to define transitivity in Hindi.

### 3.0 Features of Transitivity

If we assume that the definition of transitivity (mentioned in section 1.0) is correct, i.e., if transitivity is signified by an agent performing an act on a patient, then, in order to define transitivity in Hindi, we must ask the following questions:

- (a) What kind of agent does the verb take (animate agent, instrumental agent, inanimate agent, etc.)?  
 (b) What kind of act is expressed by the verb (action, state, etc.)?  
 (c) How does the agent perform the act (volitionally, non-volitionally)?  
 (d) What kind of patient is involved in the act (overtly expressed, implied, same as subject/agent other than the subject, etc.)?

Thus, it is clear that transitivity cannot be defined in terms of only one feature, but rather, it is an amalgam of several features, each defining one crucial aspect of the whole. A close examination of the data shows that the following features are essential for transitivity in Hindi.

- (a) Agency--the subject of a transitive verb/clause is an agent as opposed to an instrument of the act expressed by the verb.  
 (b) Volitionality--it is essential that the agent's volition controls the act.  
 (c) Activity--the act carried out by the agent should express an action as opposed to a state.  
 (d) Object--the object should be a patient which may either be expressed or implied in a sentence.

The concomitance of all the above features is essential for transitivity in Hindi. The absence of any one of these features is enough to mark a verb/sentence intransitive. Let us consider each feature. Notice that if the subject of the verb is [-agent] the verb/sentence is intransitive. The morphology of the subject denotes its role (Kachru et. al. 1976, Pandharipande 1979, 1981). Thus a subject with the -se marking expresses instrumentality of the agent while a subject with the ko marking expresses a recipient/experiencer role. Thus the subject with the -se/-ko marking indicates a lack of both agency as well as transitivity, i.e.,

X ko mālūm honā 'for X to know'

(10) { jān ko } vah bāt mālūm thī  
 { \*jān ne }  
 John-dat. that matter know aux  
 John knew the matter.

(10a) { \*jān ko } mālūm huī bāt  
 { \*jān kī }  
 { John-to/ knew matter  
 of }  
 The matter that John knew.

(11) { jān se } kām huā  
 { \*ne }  
 { John by work happened  
 Ag }  
 The work got done by John.

(11a) { \*jān se } huā kām  
 { kā }  
 John by happened work  
 The work which got done by John.

Notice that the verbs in (10) and (11) do not allow the -ne marking on their subjects and that participialization is blocked in (10a) and (11a).

If the verb expresses a non-volitional act, it lacks transitivity. Examples (10) and (11) lack volitionality as well as transitivity. It has been argued independently (Pandharipande 1978, 1981) that verbs expressing a non-volitional act fail to undergo Passive; (10) and (11) are typical cases of exceptions to passivization in Hindi. Similarly, verbs such as kar bēṭhnā 'to do by mistake' and kah jānā 'to say (something) unintentionally' fail to undergo passive and fail to qualify as transitive verbs. Notice that these verbs take two participants and that their subjects are also agents which are (-volitional) and therefore, these verbs are treated as (-transitive). Consider the following examples (12), (13), and (14), which show that the verb kar bēṭhnā fails to undergo passivization (12), -ne marking (13), and participialization (14), respectively.

- (12) \*us se sārā kām kar bṛ̥ṭhā gayā  
 he by all work do sat went  
 The whole work was done (by mistake) by him.
- (13) { \*us ne } sārā kām kar bṛ̥ṭhā  
 { vah }  
 he-Ag. all work do sat-past  
 He did all the work (by mistake).
- (14) \*kar bṛ̥ṭhā gayā kām  
 do sat went work  
 The work done (by mistake).

It is argued with evidence from Pandharipande (forthcoming) that these compound verbs fail to express volitional acts and therefore fail to undergo passive. (For more discussion on the role of volitionality in defining transitivity refer to Kachru (1981 in this volume) and Pandharipande (1982 forthcoming).

Verbs which do not express action (but rather a state, etc.) fail to qualify as transitive verbs, i.e., verbs such as dikhna 'to seem' and lagnā 'to feel' do not express any action and therefore are marked as intransitive verbs.

In Hindi, it is essential that two participants, i.e., subject and object (or agent and patient) are involved in the action expressed by the verb. However, the subject and the object may be expressed or implied. As a consequence of this, verbs in Hindi which neither express nor imply an object are treated as intransitive verbs, e.g., bṛ̥ṭhnā 'to sit', girnā 'to fall', etc. A large class of intransitive verbs in Hindi lack objects. Similarly, verbs such as kām honā 'for work to happen' neither express nor imply an agent which is evident from example (15), which lacks an overt agent. Notice that when the adverbial dhyān se 'carefully' is inserted in (15), the resulting sentence (15a) is ungrammatical. The adverbial dhyān se 'carefully' only occurs in sentences with agents (Pandharipande 1981).

- (15) kām huā  
 work happened  
 The work got done.
- (15a) \*dhyān se kām huā  
 carefully work happened  
 The work got done carefully.

If an agent was implied in (15), (15a) would be grammatical. Contrast (15a) with (16) which also lacks an overt subject/agent. However, the adverbial dhyān se 'carefully' is freely inserted in the sentence.

- (16) dhyān se kām kiyā gayā  
 carefully work did went  
 The work was done carefully.

While the verb kām honā 'for the work to happen' is intransitive, the verb kām karnā 'to do work/to work' in (16) is transitive.

#### 4.0 The Hierarchy of Transitivity

The discussion so far points out a necessity of the above four features for transitivity. However, agency, volitionality, and activity are not discrete and can be quantified only in terms of more or less (i.e., more volitional versus less volitional, etc.). Similarly, it is difficult to imagine that all transitive sentences in the language have the same proportion of the above features. The data points out that there is a hierarchy of transitivity on which some verbs are more transitive than others. The following evidence supports this hypothesis.

(a) Notice that verbs such as karnā 'to do', parhnā 'to read, study', denā 'to give', lenā 'to take' and tornā 'to break' contain all four features. However, if the subject of the above type of verbs is inanimate, (recall examples (8) and (9)) the volitionality is reduced and as a result the agency is reduced, too. Notice that such verbs show a lower level of transitivity as compared to transitive verbs with animate agents. Recall that although the ne-marking is added on to the inanimate subject (8), the participle cannot be derived (9).

(b) Now let us consider verbs such as hāsnā 'to laugh', ronā 'to cry', and nahānā 'to bathe, to take a bath' which can take/imply only cognate objects such as hāsī 'laugh', ronā 'cry', and snān 'bath'. Native speakers feel these verbs are not clearly transitive since they do not freely allow objects other than cognate objects. This lowers their transitivity and therefore the ne-marking optionally shows up on their subjects only, i.e.,

- (17)  $\left. \begin{array}{l} m\check{z} \\ m\check{i} \text{ ne} \end{array} \right\} h\check{a}sa$   
 I laughed.

(c) Native speakers feel that verbs such as jānnā 'to know', pahcānnā 'to recognize', etc., are lower in activity and volitionality as compared to verbs such as karnā 'to do', (although they do express more volitionality as compared to verbs such as patā honā 'to know which is evident from the fact that while jānnā 'to know' and pahcānnā 'to recognize' undergo passive, patā honā 'to know' does not).<sup>2</sup> The above verbs are felt to be less transitive than karnā 'to do'. This intuition of the speakers is supported by the fact that the perfective participles of jānnā 'to know' and pahcānnā 'to recognize' are not as acceptable as those of verbs such as parhnā 'to read', karnā 'to do', etc.



- (23) { vah } kām kar gayā  
 { \*usne }  
 he work do went  
 He did the work unintentionally.
- (24) us kā kiyā huā kām  
 his did aux work  
 The work done by him.
- (24a) us kā kar { bḷṭhā } huā kām  
 his do { gayā } aux work  
 { sat }  
 { went }  
 The work he did { by mistake }  
 { unintentionally }

In contrast to the above, the process of verb compounding produces transitive verbs from their intransitive counterparts in some varieties of Hindi (e.g., in the variety of Hindi spoken in Madhya Pradesh (central India) Consider the following examples.

- (25) sonā (intr.) 'to sleep' ---> so lenā (tr.) 'to sleep for oneself'
- (26) honā (intr.) 'to be' ---> ho lenā 'to become'
- (27) bḷṭhnā (intr.) 'to sit' ---> bḷṭh lenā 'to sit for oneself'

While the intransitive verbs in (25)-(27) do not take the -ne marking, their derived counterparts optionally do, as is seen in the following examples.

- (28) ve soe  
 \*unhōne soyā  
 They slept.
- (28) a) ve so liye  
 b) unhōne so liyā  
 They slept for themselves.
- (29) ham un ke sāth the  
 \*ham ne  
 we them with were  
 We were with them.
- (30) a) ham un ke sāth a) ho liye  
 b) ?ham ne b) ho liyā  
 we them with became took  
 We joined them.
- (31) ham bḷṭhe  
 \*ham ne bḷṭhā  
 We sat.
- (31) a) ham ne bḷṭh a) liyā  
 b) ham b) liye  
 we sit took  
 We sat for ourselves.

Notice that native speakers feel that the derived verbs are not as transitive as karnā 'to be' which is evident from the fact that ne is optionally added to the subject. Native speakers do not have very clear judgments about the placement of the -ne marking in (28), (30), and (31a). Also, perfective participles are not derived from these derived transitive verbs. Consider the following example.

- (31b) \*bḡṭh liye log  
 sit took people  
 People who {had } slept for themselves.  
                   (have }

Native speakers intuitively feel that while the explicator lenā 'to take' increases the volitionality of the above intransitive verbs it does not provide an object (i.e., the act bḡṭhnā 'to sit' itself is vaguely felt to be the object). Therefore, transitivity is low in the verbs in (28), (30), and (31a). The addition of an explicator (transitive) does not necessarily increase transitivity, i.e., both calnā 'to leave' (intr.) and its counterpart cal denā 'to leave'

leave give

(emphatic), to go away' are felt to be intransitive verbs. This intuition is supported by the fact that ne is blocked for both calnā 'to leave' and cal denā 'to leave, to go away'. Similarly, perfective participles are not derived from them.

The above evidence shows that we have to assume a cline of transitivity in Hindi. Bhatia's (1981, in this volume) discussion on features of transitivity supports the above hypothesis.

#### 5.0 Transitivity and Causativity in Hindi

A close examination of the Hindi data shows that the above-mentioned features of transitivity strikingly resemble the features of causativity in Hindi. This hypothesis explains why the above four features cluster around transitivity in Hindi. In what follows I will provide evidence to support this hypothesis. The relationship between transitivity and causativity has been discussed in various studies. It is claimed within the generative semanticists' framework that a transitive verb has an embedded intransitive sentence predicate with a cause node, (Dowty 1972, McCawley 1968, 1971). At this point, I am not making any claims about the exact derivational history of transitive verbs in Hindi, but rather, my purpose here is to demonstrate the similarity between the notions of transitivity and causativity in Hindi.

(a) The major process of deriving transitive verbs in Hindi is to add the causative morpheme /ā/ to intransitive verbs, (Guru 1952, Kachru 1980, Vajpeyi 1959).

(32) calnā 'to walk' ---> cal-ā-nā 'to drive'

(33) uṭhnā 'to get up' --> uṭh-ā-nā 'to wake up (someone)'



(b) There are pairs of conjunct verbs in Hindi which seem to hold a causal relationship. (For further discussion on conjunct verbs refer to Kachru 1980).

- (34) a) kām honā 'for work to happen'  
 b) kām karnā 'to do the work'
- (35) a) band honā 'to be closed'  
 b) band karnā 'to close'

Pairs such as (34a and b) and (35a and b) form a large class in Hindi. (34a) and (35a) have the intransitive verb honā 'to be' and (34b) and (35b) have the transitive verb karnā 'to do'. Notice that the causal relationship between (34a) and (34b) as well as between (35a) and (35b) is very clear from the gloss. Notice that (34a) and (35a) do not have other causative counterparts besides (34b) and (35b), respectively. Therefore, it is reasonable to assume that (34b) and (35b) hold a causal relationship with (34a) and (35a), respectively.

(c) The processes of causativization and transitivization as discussed in (b) above, are also functionally similar, i.e., they both create objects from basic subjects. Recall that two participants (subject/agent and object) are required for a sentence to qualify as a transitive/causative sentence (section 3).

(d) There is a very large class of transitive verbs in Hindi which native speakers feel are semantically related to their respective intransitive counterparts.

- (36) ṭūtnā 'to be broken'                      ṭornā 'to break'
- (37) biknā 'to be sold'                              becnā 'to sell'
- (38)  $\left\{ \begin{array}{l} \text{dikhāī} \\ \text{dikhnā} \end{array} \right\} \left\{ \begin{array}{l} \text{denā} \\ \text{parnā} \end{array} \right\}$  'to be seen'                      dekhnā 'to see'
- (39) chūtnā 'to leave'                              chornā 'to leave'

The causal relationship between the above intransitive verbs and their transitive counterparts is pretty clear. It is observed that 'morphologically unrelated verbs in certain languages stand in semantic relation to one another as do pairs of verbs that are related by means of a productive morphological construction in other languages' (Lyons: 1977:489).

(e) An interesting piece of evidence to support our hypothesis comes from the phenomenon of language change in at least one (North Eastern) variety of Hindi. Verbs such as khānā 'to eat' and pīnā 'to drink' do not have intransitive counterparts in Hindi. In the above variety of Hindi the intransitive counterparts are constructed by

native speakers. Such forms are freely used in the spoken/informal style but as yet are not used in the formal style of the language.

Transitive	Intransitive
(40) <u>khānā</u> 'to eat'	<u>khilānā</u> 'to be eaten' * <u>khilnā</u>
(41) <u>pīnā</u> 'to drink'	<u>pilānā</u> 'to be drunk' * <u>pilnā</u>

The above examples indicate that native speakers feel that transitive verbs hold a causal relationship with their intransitive counterparts.

(f) Another piece of evidence to support our hypothesis comes from the fact that verbs which are lower on the transitivity hierarchy do not have causative counterparts, i.e., jānnā 'to know' and pahcānna 'to recognize' do not have causative counterparts such as \*janwānā 'to make/cause to know' and \*pahcān(w)ānā 'to make to recognize', respectively.

If we assume that the above verbs are lower on the transitivity hierarchy, (recall the discussion in section 4(c)) and thereby express a lower level of causation, we can explain why these verbs do not have intransitive (syntactic/semantic) counterparts in Hindi. In such cases the gap is filled by using conjunct verbs of which the first member is a passive participle from Sanskrit and the second part is the auxiliary verb honā 'to be', i.e.,

- (42) gyāt honā 'to be know' (intr. of jānnā 'to know')  
known to be
- (43) paricīt honā 'to be familiar' (intr. of pahcānā 'to recognize')  
familiar to be  
know

(g) Causativity<sup>3</sup> and transitivity in Hindi share the above four features in common, e.g., both need a volitional agent to be the subject. Notice that if the subject is instrumental, neither a transitive (44) nor a causative (45) verb is used. Consider the following sentences.

- (44) \*(merī) { khusī } ne yah kām kiyā  
{ kośis }  
(my) { happiness } Ag. this work did  
{ effort }
- (My) { happiness } did the work.  
{ effort }
- (45) \*(merī) { khusī } ne mujh se yah kām karāyā  
{ kośis }  
(my) { happiness } Ag. me by this work make-do-past  
{ effort }
- (My) { happiness } made me do this work.<sup>4</sup>  
{ effort }

- (46) (merī) {khuṣī } ke kāraṅ yah kām huā  
 {koṣīś }  
 (my) {happiness } because of this work happened  
 {effort }
- The work got done because of my {happiness. }  
 {effort. }

(h) If an intransitive verb in Hindi has a causative (morphological) counterpart then it does not have another transitive (morphological/semantic) counterpart in the language. This is predictable within our hypothesis that causative and transitive verbs express a similar causal relationship. Therefore, the existence of another transitive verb (besides causative) is only redundant.

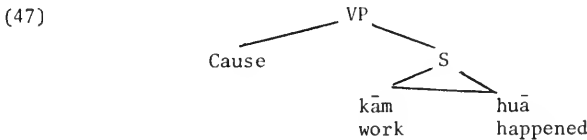
(i) Intransitive verbs such as jānā 'to go' which have transitive (semantically causative) counterparts, i.e., bhejṅā 'to send' fail to undergo the process of causativization. Thus causative verbs such as jānānā/jānwānā 'to make go, send' are absent in the language.

#### 6.0 Conclusion

The major points in the preceding discussion can be summarized as follows: (a) agency, volitionality, activity and the involvement of two participants are four essential features of transitivity in Hindi, (b) transitivity is a continuum on which some verbs are more transitive than others, and (c) the features of transitivity in Hindi are similar to those of causativity in Hindi.

There are some questions which need to be answered in this context.

(a) Since Hindi has a morphological process of deriving transitive verbs from their intransitive counterparts by using the causative suffix /ā/ and since transitive verbs express a causal relationship with their intransitive counterparts, is it plausible to propose that all transitive verbs in Hindi are derived from their intransitive counterparts? If so, what is the process of the derivation? Should we assume (47) to be the basic structure (pre-lexical) for the transitive verb karnā 'to do'?



If the above structure is assumed, we will have to define transformations which would transform the subject kām into the object by substituting the verb karnā 'to do' for honā 'happen'.

(b) Should we treat the processes of ko/se markings (on the subject) as filters which block the derivation of transitive verbs? If so, at what stage in the derivation should they apply?

The above questions have definite theoretical/empirical implications and a great deal of research needs to be done before making any conclusive statements.

(c) How do we define the relative status of a transitive verb? Should inchoative type verbs, i.e., jānna 'to know', etc. be placed lower on the hierarchy than transitive verbs with inanimate agents? While inchoative verbs would be placed very low on the activity scale, verbs with inanimate agents would be placed low on the volitionality scale. The question then is: Are there any language particular/ language independent parameters to judge the relative status of the transitive verb?

(d) Pairs of verbs such as kām honā 'for work to happen' versus kām karnā 'to do the work' exist also in a number of other Indo-Aryan languages, such as Marathi, Gujarati, etc. It would be interesting to find out the historical development of such pairs of verbs in these languages.

(e) A close examination of the data shows that the link between transitivity and causativity in Hindi is better understood if we examine their function in the language use. Lyons 1977:511 points out "... so far as transitivity and causativity are associated with motion from a source to a goal, there may well be grounds for believing, as many scholars have done, that in referring first to the agent one is adopting as the communicative point of departure what is also the more natural cognitive point of departure."

In the context of the four features of transitivity I examined some Hindi short stories in order to identify the contexts where transitive/ causative versus intransitive verbs are used. There is clear evidence to assume that transitive/causative verbs are used where the theme moves ahead, i.e., where the author describes the events in the story, while intransitive verbs are used where the background information necessary to develop the theme is presented. Thus descriptions of the psychological states, nature, or the effect of the situations on the characters is presented; more often than not, intransitive verbs are used. In contrast to this, where deliberate actions are described, transitive and causative verbs are used by the authors.

Consider the following paragraph (48a) which is from a Hindi short story entitled 'ek balig aurat ka faisla' 'the decision of a mature woman.' The story focuses on a woman named Rītā whose life has been controlled by other people, in particular her brother-in-law, Harish. The story portrays two sides of Rītā's personality, i.e., Rītā as a weak woman and Rītā as a mature woman who makes a decision about her own marriage. The major event of the story is Rītā's conversation with her brother-in-law where Rītā announces her decision. She despises her brother-in-law for being selfish and hypocritical and who has been pretending to be her guardian for his own selfish interests.

## (48a) Transitive Verbs:

umra bhar kī cuppi ke bād āj us ne pahlī bār zabān kholī thī aur vah bahut-kuch kahnā cāhtī thī magar Harīś ne kahne kā awSār nahī diyā. vah sāyad tewart bhāp gayā aur cupcāp kamre se bāhar calā gayā. Jāne ke bād hī rītā ne use 'dhōgi' pākhañdī kahkar dilki bhāñrās mikālī. Magar vah iske alāwā bhī bahut kuch kahnā cāhtī thī aur Harīś ko sunākar kahnā cāhtī thī. Isliye tanik rukkar phir budbudātī hē "mē jāntī hū ki tum ne sajjantā kā yah mukhautā lagā rakhā hē , use ye ujle kapre nahī chipā sakte.

After long years (life time) of silence, she had opened her mouth today for the first time and she wanted to say a lot, but Harish did not give her any opportunity to do so. Perhaps he anticipated her mood and quietly slipped out of the room. After, he had left, Rita called him 'hypocrit', 'fraud' and released the tension of her heart. However, she wanted to say a lot more and she wanted to say it in Harish's presence so that he would listen to it. Therefore, after a little while she says angrily "I know you have put on this mask of a gentlemen, your smile is fake, too. Your soul is full of deceit and even your clean clothes cannot hide it."

## (48b) Intransitive Verbs:

Rītā ke cehre kī tanī huī ragē kuch dhīlī par jātī hē. Use apne bhītar ek tarah kī rāhat mahsūs hotī hē. "Adhik nahī kah saktī to na sahī; kahne-sunne kā uddesya pūrā ho gayā. Harīś sirf cīrhā hī nahī jal-bhun gayā, bilbilā uṭhā. 'Acchāl' kewal sabda nahī, uski ghāyal ātmā se niklī huī cīkh thī.

The strained nerves on Rita's face became loose and relaxed. She had a feeling of satisfaction. She could not say more - it was all right. The whole purpose of her talk was to get Harish angry and to sooth her wounded heart. That goal was achieved. Harish not only got angry but he was almost burnt with it. "Good!"- was not only a word - a sound, it was a scream of her wounded soul.

Ek bālig aurat kā faisalā 'The decision of a mature woman': Rahbar: 1965 In 'Hindi ke lokpriya kathākār; paccīs śreṣṭh kahāniyā. Kewal S. ed., Delhi, N. D. Sahgal and Sons. Pp. 99-110.

Notice the use of transitive as well as causative verbs underlined in (48a). Contrast (48a) with (48b) where the effect of the above event on Rītā is described. Notice the use of intransitive verbs in (48b).

Now consider the paragraph (49a) which is from nafrat kī maut 'the death of hatred'. One of the major events in the story is described in (49a). Chandraprakāsh sends his own story to a publisher who eventually rejects it. (49a) described Chandraprakāsh's effort in putting the

story together and in sending it to the publisher while (49a) described the reaction of Chandraprakash's wife to the letter of rejection by the publisher. Notice that more causative/transitive verbs are used in (49a) while more intransitive verbs are used in (49b).

(49a) Transitive verbs:

is kahānī par Candraprakāś ne mahīnō pariśram kiyā thā bār bār kātā thā, jorā thā, ghaṭayā thā, barhāyā thā. bhejne se pahle usne apne mitr Rāmcandra se use moṭe hare kāgaz par ṭāip karāyā thā. baṛī āsā ke sāth Candraprakāś ne use ek sī patrikā ke sampādak ke pās bhejā thā jo use bahut pasand thī. sāvitri se usne pūchā bhī thā, "kahānī thik hē ? chap jāegī? Aur Sāvitrī ne apne us kamzor kṣaṇ mē Candraprakāś kī drṣṭi mē jamī āsā ko dekhkar kahā thā "hā zarūr chap jāegī".

Candraprakash had worked hard on this story - he had cut it apart - and joined it back several times. He had shortened it and added to it. Before he sent it out, he had gotten it typed on thick green paper by his friend Ramcandra. With great hope, he had sent it to the editor of a magazine which he liked a lot. He had asked Savitri also "Is the story all right? Will it get published?" She saw the hope in Candraprakash's eyes and in that weak moment of hers she said, "Yes, it will be certainly published."

(49b) Intransitive verbs:

Pandrah dīn aur bīt gae aur patrikā se koī jāwāb nahī āyā to Candraprakāś ne ek dīn kahā thā "kahānī abhī tak vāpas nahī āī. Sāyad kahānī chap jāegi."

Fifteen more days passed. When he did not get any reply from the magazine, then Candraprakash had said one day, "The story has not come back yet. Perhaps it will be published."

Intransitive verbs:

Aur ab "kahānī sadhanyawād lauṭāī jā rahī hē , kyō ki ham iskā upyog karne mē asamarth hē."

Yah kahānī kā aswikṛtipatr nahī thā, sāvitri kī sārī abhilāśāōkā aswikṛtipatr thā...

Sāvitrī ke hōṭh simat gae, uskā dil simat gayā, uskā dimāg simat gayā aur uske antar mē sab kuch nafrat ke ek bindu mē kendrit hokar rah gayā. Aur jyō jhō samay bittā gayā sekand, minat, aur ghanṭe bītte gae, yah bindu uske man mē dhāstā gayā.

And now "the story is being returned to you, we are unable to make use of it."

This was not the letter or rejection of the story it was the letter of rejection of all of her aspirations...

Savitri's lips puckered, her heart became motionless, her mind stopped functioning. Everything got concentrated on one point in her heart. As the time passed - seconds, minutes, hours, this spot kept settling deeper and deeper into her heart.

Nafrat kī maut 'The death of hatred'. kulbhūṣan. 1965. In Hindi ke lokpriy kathākār: Paccis sreṣṭh kahāniyā. Shaktipal kewal ed., Delhi N.D. Sahgal and Sons.

Examples (48a)-(49b) show that the causative/transitive verbs are used to describe volitional acts which are central to the theme of the story while intransitive verbs are used to describe states (or the effect of the major events on the characters). This observation is in consonance with the hypothesis in the preceding discussion according to which transitive/causative verbs express deliberate acts.

#### NOTES

An earlier version of this paper was presented at the 10th Wisconsin Conference on South Asia held in November 1981.

<sup>1</sup>There are a few verbs in Hindi (e.g., pahannā 'to wear') whose perfective participles may agree with either of the two participants in the act (i.e., agent or patient). However, the class of the above verbs is very small. The reason for this phenomenon is discussed in detail in Pandharipande and Kachru 1976.

<sup>2</sup>Both jānā 'to know', and pahcānā 'to recognize' undergo Passive as is evident from the following examples.

- (a) yah jānā gayā hē ki amrikā ab śastra nahī bhejēgī  
 this knew went aux that America now weapons neg. will send  
 It has been found out that America will not send the weapons, now.
- (b) { vah } (mujhse) pahcānā nahī gayā  
       { usko }  
       he (by me) knew not went  
       a) He was not recognized by me.  
       b) I could not recognize him.

<sup>3</sup>Causativity is used as a technical term in linguistic studies (Lyons 1977, etc) to denote "the notion of causality, according to which agents are seen as causes of the situations which they bring into existence" (Lyons 1977:490). While causality refers to the cause-effect relationship in general, causitivity refers to a specific type of causality as mentioned above.

<sup>4</sup>In the metaphorical usage of the language (44) and (45) are acceptable, In this case khushi 'happiness'/'kosis 'effort' are viewed as agents.

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TRANSITIVITY AND VOLITIONALITY IN HINDI-URDU

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This paper discusses the syntactic and semantic categories of verbs such as intransitive-transitive, stative-inchoative-active, volitional-non-volitional, and attempts to answer the question: Are all active verbs volitional in Hindi-Urdu? In order to answer this question, the paper discusses the grammatical devices that signal the volitional-non-volitional distinction in Hindi-Urdu. The productive processes that change volitional verbs into non-volitional, or vice-versa, are also discussed. Finally, crucial evidence is provided to show that transitivity, volitionality and action are three distinct parameters that vary independently of each other in the language.

INTRODUCTION<sup>1</sup>

1.0 On the basis of syntactic facts, Hindi verbs are classified into categories such as the following:<sup>2</sup>

- 1.a. intransitive-intransitive-complex transitive-ditransitive-causative<sup>3</sup>
- b. unmarked subject-oblique subject<sup>4</sup>

In addition, on the basis of semantic facts with important syntactic consequences, verbs are categorized as follows:

- c. stative-inchoative-active
- d. volitional-non-volitional<sup>5</sup>

The categories of stative-inchoative, dative subject, and non-volitional verbs coincide and are not necessarily mutually exclusive. Verbs that are stative or inchoative and take a dative subject are invariably non-volitional; however, not all non-volitional verbs take dative subjects. Some intransitive and transitive verbs take unmarked subjects, or subjects marked with postpositions other than *ne* which are non-volitional. All active intransitive and transitive verbs (including complex transitive, ditransitive and causative verbs) are volitional.

The facts presented so far seem fairly straightforward. These may, then, suggest the following question: If all active verbs are volitional, what justification, if any, is there for positing volitionality as an independent characteristic of Hindi verbs? Would not 'active' redundantly specify 'volitionality' as well? In this paper, I will attempt to justify the notion 'volitionality' independent of the notion 'action'.

## GRAMMATICAL PROCESSES THAT SIGNAL "VOLITIONALITY"

2.0 There are several grammatical devices by which the volitionality feature associated with a verb may be signalled. In the first part of this section, I will discuss the pairs or triples of verbs which express the distinction 'volitional - non-volitional', then I will discuss the productive grammatical processes that are used to signal this distinction.

The first relevant grammatical fact is the pairing of intransitive - transitive verbs through the morphological process of causativization. Consider, for example, the following:

2. vah phuulō kii maalaa le kar jaa rahaa thaa. kisii ke dhakke se maalaa kiicaR mē gir gaii.  
He was going with a garland in his hand. He dropped the garland (accidentally) when someone dashed into him (accidentally).
3. vah phuulō kii maalaa le kar jaa rahaa thaa. kisii ke dhakke se \*usne maalaa kiicaR mē giraa dii.  
He was going with a garland in his hand. \*He dropped the garland into the mud when someone dashed into him (accidentally).
4. vah phuulō kii maalaa le kar jaa rahaa thaa. kisii ne dhakka de kar maalaa kiicaR mē giraa dii.  
He was going with a garland in his hand. Someone dashed into him and caused the garland to be dropped into the mud deliberately.

In 2, an accidental happening is described; in 3, the adverbial kisii ke dhakke se suggests an accident, but the use of the transitive verb giraa dii suggests a deliberate act, hence, the sentence is not well-formed. In 4, both the adverbial and the verb express deliberate action and the sentence is well-formed.

The second grammatical process is that of using a select number of verbalizers with adjectives or nouns to create new verbs, which is productive. This process has resulted in a large number of verbs described as nominal compound or conjunct verbs (Kachru 1980:61-62). The verbalizers used are mainly honaa for stative, honaa, bannaa, or aanaa for inchoative, and karnaa for active (see also Bhatia (in this volume)). The following sets illustrate this process. Note that the stative inchoative verbs made up of noun + verbalizer take dative subjects.

5. rajnii ko tumhaarīi baatē yaad haī. (stative)  
Rajni remembers all that you said.
6. ye patra dekhte hii rajnii ko tumhaarīi baatē yaad aaengii. (inchoative)  
Rajni will remember all that you said as soon as she sees these letters.

7. usne baarah gunē baarah tak kaa pahaaRaa yaad kar liyaa hai.  
(active)  
He has memorized multiplications tables up to twelve times twelve.
8. sushma xush hai. (stative)  
Sushma is happy.
9. apnii saheliiyō ko dekh kar sushmaa xush ho gaii. (inchoative)  
Sushma was (became) happy to see her friends.
10. kaa kiimtii upahaar de kar raanii ne sushmaa ko xush kar liyaa.  
(active)  
Rani made Sushma happy by giving her many expensive gifts.

Adverbials such as jaan-buujuh kar 'knowingly', man lagaa kar 'attentively', soc-samajh kar 'after careful consideration', koshish karke 'with effort' and others that express deliberate action occur in sentences such as 7 and 10; their use in sentences such as in 5-6 and 9-10 yield ill-formed sentences, as is evident from 11-13.

11. \*rajnii ko jaan-buujuh kar tumhaarii baatē yaad hai.  
Rajni deliberately remembers all that you said.
12. \*sushmaa jaan-buujuh kar xush ho gaii.  
Sushma deliberately became happy.
13. \*vah jaan-buujuh kar dukhii hai ki aapse nahii mil sakaa.  
He is deliberately sorry that he could not meet you.

Evidence for the claim that this process of selecting appropriate verbalizer and using dative subject construction is productive comes from ongoing borrowing of English nouns, adjectives, and verbs to create new conjunct verbs such as the following.

14. kamiTii ko aapke bajaT par aabjekshan thaa, isliye aapkaa aplikeshan rijekT ho gayaa.  
The committee had objections on your budget, therefore, your application was rejected.
15. kamiTii ke kaa membaarō ne aapke bajaT par aabjekshan kiyaa/uThaayaa, isliye aapkaa aplikeshan rijekT kar diyaa gayaa.  
Several members of the committee raised objections on your budget, therefore, your application was rejected.

Again, 14 expresses a state of affairs with no implication of deliberate action on anyone's part, whereas 15 expresses a volitional act on the part of an agent. Therefore, an adverbial such as aapko paareshaan karne ke liye 'in order to harass you', if inserted in 14 would result in an ill-formed sentence, but would yield a grammatical sentence in 15.

A third process, rather restricted, is that of intransitivizing

transitive verbs by using morphological processes similar to the ones used for causativization ('anticausative' in Masica 1976). The following illustrate this process.

16. maī kapRe dho rahii hūū. (active, transitive, volitional)  
I am washing clothes.
17. kapRe dhul rahe haī. (inchoative, intransitive, non-volitional)  
The clothes are getting washed.
18. usne dhyaan se tasviirē dekhīī. (active, transitive, volitional)  
He looked at the pictures attentively.
19. bacca rone hii vaalaa thaa ki duur se use apnii māā aatii huii dikhiī aur vah uskii or dauRaa. (inchoative, intransitive, non-volitional)  
The child was about to cry when he saw his mother coming from a distance and ran toward her.
20. jab merii koiī naiī kitaab chap kar aatii thii to mere ghar mē ek utsav man jaataa thaa. 'Baccan': niiR kaa nirmaan phir  
Whenever one of my new books was printed and delivered, a festival got celebrated in my house. (intransitive manaa derived from transitive manaanaa 'celebrate').

Verbs such as dhulnaa 'get washed', dikhnaa 'become visible', manaa 'be celebrated', kahlaanaa 'be named' are used as intransitive or dative subject verbs to express non-volitionality. In Eastern Hindi, the first causal of affective verbs (Kachru 1980:96) are used to signal the non-volitional meaning as in the following.

21. zor se bolo, kuch nahī sunāataa.  
Speak loudly, nothing is audible (i.e., I can't hear you).
22. hamse ThaNDaa khaanaa nahī khilāataa.  
I can't eat cold food.

A fourth process is that of using abstract verbal nouns derived from active transitive verbs or non-stative adjectives with appropriate verbalizers to express the non-volitional meaning. Compare the following.

23. kal maī ek mahfil mē gayaa thaa jahāā \*mujhe baRii acchii Gazlē sunāai paRīī.  
Yesterday I went to a concert where \*I accidentally heard very good Ghazals.
24. kal maī ek mahfil mē gayaa thaa jahāā maī ne baRii acchii Gazalē sunīī.  
Yesterday I went to a concert where I listened to many good Ghazals.

25. vahāā uskii baRii buraaii ho rahii thii.  
There he was being maligned.
26. suresh ramesh kii buraaii kar rahaa thaa.  
Suresh was maligning Ramesh.
27. \*mujhe dhyaan se acchii Gazlē sunaii paRii.  
I (accidentally) heard very good Ghazals attentively.
28. \*vahāā jalan ke maare uskii baRii buraaii ho rahii thii.  
He was being maligned there because of jealousy.
29. suresh jalan ke maare ramesh kii buraaii kar rahaa thaa.  
Suresh was maligning Ramesh because of jealousy.

Sentence 23 is ill-formed because after specifying a context for deliberate action, the second conjunct indicates an accidental event. Sentence 27 is ill-formed because the adverbial suggests a deliberate action whereas the verb expresses a non-volitional, accidental event. The same is true of 28. The adverb suggests a volitional agent capable of feeling jealous, the verb expresses a non-volitional process. Sentences 24, 25, 26, and 28 are well-formed since there are no contradictions in them.

A fifth, productive process for signalling non-volitionality is that of verbal compounding. Consider the following.

30. raakesh ne xuub soc-samajh kar sab baatē kahii.  
Rakesh said things after careful consideration.
31. raakesh bināa soce-vicaare sab baatē kah gayaa.  
Rakesh blurted out things without thinking.
32. \*raadhaa soc-vicaar kar sab baatē kah jaatii hai.  
Radha blurts out everything after careful consideration.
33. \*soc-samajh kar pati-patnii aapas mē laR baiThe.  
After careful consideration, the couple had a fight.
34. vah jaan-buujh kar apne bhaaii se laR rahaa hai.  
He is deliberately fighting with his brother.

Verbs such as kahnaa 'say' and laRnaa 'fight' are active, volitional verbs, hence, sentences 30 and 34 are grammatical. Compounding with jaanaa 'go' or baiThnaa 'sit' negates the volitionality of the main verb, hence, 32 and 33 with the deliberate action adverbials are ill-formed. Sentence 31, on the other hand, contains an adverbial that expresses a lack of deliberate action which is in consonance with the compound verb kah jaanaa 'blurt out', hence, it is well-formed. The explicators that signal the lack of volitionality are jaanaa 'go', uThnaa 'rise', baiThnaa 'sit', and paRnaa 'fall' - all intransitive. Note that compounds made up of transitive verbs and these explicators are not used in imperative sentences either, which confirms the hypothesis that these compound verbs are non-volitional.<sup>6</sup> Sentences 35-37 are ill-formed.

35. \*sab baatē kah jaaō! Blurt out everything!
36. \*is peR ko kaaT baiTho! Chop down this tree!
37. \*baRō ke biic mē bol uTho! Speak up among the elders!

A sixth device utilized for signalling diminished volitionality is the use of adverbials such as beman se 'unwillingly', na caahte hue bhii 'without wanting to', anicchaa se 'without wanting', etc. That these adverbials reduce volitionality is clear from the fact that these sound odd in direct imperatives.

38. ??beman se sab baatē bataao!  
Tell everything unwillingly!
39. ??na caahte hue bhii gaanaa sunaaō!  
Sing a song without wanting to!

They, however, sound perfectly natural in constructions that express some external compulsion.

40. beman se hii sahi, tumhē sab baatē bataanii paRengii.  
You will have to tell everything even though you are unwilling.
41. na caahte hue bhii use baas ke yahāā paarTii mē jaanaa paRaa.  
Although he didn't want to, he had to go to the boss's party.

The main verb in the infinitive followed by the item paR- in 40 and 41 with the dative subject expresses external compulsion (Kachru 1980:50).

So far, I have discussed devices used to signal volitionality, and processes used to negate or reduce the volitionality of volitional verbs. I shall now discuss the devices that make non-volitional verbs volitional.

The first productive device is compounding with lenaa 'take', denaa 'give', Daalnaa 'pour or add', and maarnaa 'hit'.<sup>7</sup> Verbs that express reflex action can be made volitional by compounding with explicators from this set. Consider the following.

42. mere calte vaqt use chīk aa gaii to vah baRaa sharmindaa huaa.  
He sneezed when I was about to leave and felt ashamed of himself.
43. mere calte vaqt usne ek chīk maarii aur yah kah kar mujhe rok liyaa ki is apshakun ke baad ravaanaa honaa Thiik nahīī.  
He sneezed just as I was about to leave and stopped me by saying that it would not be proper to set out after this bad omen.

Sentence 42 expresses a reflex action, sentence 43 a deliberate one. Adverbs such as jaan-buujh kar 'deliberately' are not appropriate in 42, they would be appropriate in 43.





51. baNTii kii cabhii kho gaii thii, isliye use der tak baahar hii mAA kaa intazaar karnaa paRaa.  
Banti's key got lost, so he had to wait for his mother for a long time outside.
52. BaNTii nahii caahtaa thaa ki uskii mAA naukrii kare, isliye baar baar apni caabhii kho detaa thaa.<sup>9</sup>  
Banti did not want his mother to work, so he would lose his key repeatedly.

Higher verbs such as koshish karnaa 'try', caahnaa 'want', tay karnaa 'decide' that clearly express volitionality impose a volitional interpretation on the lower verbs even if they are basically non-volitional.

53. vah jaan-buujh kar bhiiR mē kho jaane kii koshish kar rahaa thaa par mohan ne use dekh hii liyaa.  
He was deliberately trying to lose himself in the crowd, but Mohan spotted him.
54. vah caahtaa thaa ki dal ke har vyakti ke baare mē sab kuch jaan jaae.  
He wanted to know everything about everyone in the party.

Both 53 and 54 are well-formed since the higher verbs determine the nature of the subordinate verbs.

The process of using adverbials such as jaan-buujh kar 'deliberately' and svecchaa se 'of one's own volition' to mark non-volitional verbs as volitional is also utilized.

55. use dekhte hii jaan-buujh kar gir paRo taaki use vishvaas ho jaae ki tumhaarii tabiiyat Thiik nahii.  
As soon as you see him, deliberately fall down so that he concludes that you are not well.
56. hāsii na bhii aae to koshish karke uske har mazaak par hāsnaa.  
Even if you can't laugh (naturally), try and laugh at all his jokes.

In 55, gir paRnaa is volitional and so is hāsnaa in 56.

#### CONCLUSION

3.0 The picture that emerges from the above discussion is rather complex and worth exploring further. It is clear that transitivity, action, and volitionality are independently variable parameters and various devices are utilized to vary them in Hindi. The following sentences show that in fact, transitivity, action, and volitionality are independently variable by utilizing the devices discussed so far. The verb kho jaanaa is intransitive and non-active, non-volitional in 57, hence 58 is ungrammatical.

57. merii cabhii kho gaii.  
My key got lost.
58. \*merii cabhii kho jaa rahii hai.  
My key is getting lost.

The verb kho denaa, on the other hand, is transitive, active, and volitional, and yet does not denote action, hence 60 is not well-formed.

59. usne apnii kalam kho dii.  
He lost his pen (intentionally).
60. \*vah apnii kalam kho de rahaa hai.  
He is losing his pen.

Note that the ungrammaticality of 60 is not due to the fact that kho denaa is momentary, even inserting an adverb such as baar baar 'repeatedly' does not improve it. Other verbs such as kuudnaa 'jump', which also express momentary dynamic situations, occur with progressive and have the interpretation 'repeated' action, since they are verbs of action. It may be argued that compound verbs signal the perfective meaning (Porizka 1967-69, Hook 1974; but see Kachru 1979), therefore, it is natural that they would not occur in the progressive. Note, however, that compound verbs such as calaa jaanaa 'depart', de denaa 'give away' and bataa denaa 'divulge secrets', which are action verbs, do occur in the progressive.

It has already been established that volitionality is crucial for passivization in Hindi (Pandharipande 1981). One way of establishing volitionality as an independent characteristic of the verb in Hindi would be to test if the processes discussed above for increasing or reducing volitionality have any consequences for passivization. Although verbs such as hāснаа 'laugh', ronaa 'cry', maarnaа 'hit', kahnaа 'say' are passivizable in Hindi, the compounds hās paRnaа, ro uThnaа, maar baiThnaа and kah jaanaа are not. However, compounds such as kho denaa, jaan lenaa are readily passivized as is clear from the following examples.

61. thakaavaT ke maare usse hāssaa bhii nahīī jaa rahaa thaa.  
He could not laugh because of being tired. (i.e., He was so tired he could not laugh.)
62. \*uskii betukii baatē sun kar bhii usse hās paRaa nahīī gayaa.  
Even though he heard his nonsense, he could not burst out laughing.
63. pahle sab baatē jaan lii jaaē, tab koiī faislaа ho.  
First every information should be gathered, then decisions should be made.

There are many points that can be discussed with regard to the notions volitionality, action, and transitivity. One such point is that the interaction of distinctions in terms of transitivity, stativity, and volitionality offers immense possibilities for stylistic exploitation. (See Appendix for some examples.) A study of this phenomenon, both in speech events and in literary texts of various genres should prove to be both fascinating and rewarding.

## NOTES

<sup>1</sup>An earlier version of this paper was presented at the Tenth Wisconsin Conference on South Asia held at Madison, Wisconsin, November 8, 1981.

<sup>2</sup>See the Appendix for examples of all the classes of verbs mentioned in 1(a)-(d).

<sup>3</sup>This classification is strictly on the basis of valency, i.e., the number of arguments a verb takes (see Lyons 1977, 481-488 for an extended discussion of valency). The notions relevant to this paper are the following: 'stative' refers to a 'static situation or state'; 'inchoative' refers to 'dynamic situations (either momentary or extended through time) which are not under an agent's control'; 'active' refers to 'dynamic situations under the control of an agent'. (See Pandharipande (in this volume) for the syntax of transitivity.)

<sup>4</sup>Oblique subjects are marked with postpositions such as ne and se (active and passive agentives) and ko ('dative' subject construction). Notional subjects may be marked with other postpositions also, e.g., instrumental se, genitive kaa, (see Bhatia (in this volume)).

<sup>5</sup>See Kachru 1980 for a discussion of these distinctions.

<sup>6</sup>See Kachru and Pandharipande 1980 for a detailed discussion of the relevance of the notion 'volitionality' for verb compounding in Hindi-Urdu and other selected South Asian languages.

<sup>7</sup>See footnote above. See also Kachru 1979 for a discussion of the semantics of the explicator verbs.

<sup>8</sup>Note that jaanaa 'know' and samajhnaa 'understand' do not behave like regular transitive verbs in all contexts. The verb jaanaa 'know', when stative, does not occur in the progressive, neither does the compound verb jaan lenaa as it denotes an 'act' rather than an 'action' (Lyons 1977, loc.cit.). The verb samajhnaa takes both an unmarked subject and a marked (with ne) subject, and, when active, occurs in progressive. A detailed investigation of the properties of these verbs is yet to be done. Pandharipande (in this volume) discusses the syntax of these verbs.

<sup>9</sup>Verbs such as *kho jaanaa* are not stative. They are non-volitional and express 'events' (Lyons 1977, loc.cit.). Verbs such as *kho denaa*, on the other hand, are volitional 'acts' or 'achievements' (Vendler 1967). As such, they do not express 'actions' and do not occur in the progressive.

## APPENDIX

I. Sub-classes of Verbs

- (i) *laRkaa ro rahaa hai.*  
The boy is crying.  
[inchoative, unmarked subject, active, non-volitional/volitional]
- (ii) *bacce titlii pakaR rahe hāī.*  
The children are catching butterflies.  
[transitive, unmarked subject, active, volitional]
- (iii) *makaan baRaa hai.*  
The house is big.  
[intransitive, unmarked subject, stative, non-volitional]
- (iv) *patte jhaR rahe hāī.*  
The leaves are falling.  
[intransitive, unmarked subject, inchoative, non-volitional]
- (v) *aaj shaamvaale naaTak mē siimaa shankuntalaa ban rahii hai.*  
Sima is becoming (i.e., acting as) Shakuntala in this evening's play.  
[intransitive, unmarked subject, inchoative, volitional]
- (vi) *bacce ko pyaas lag rahii hai.*  
The child is feeling thirsty.  
[intransitive, dative subject, inchoative, non-volitional]
- (vii) *mujhse gilaas TuuT gayaa.*  
I broke the glass (unintentionally).  
[intransitive, inchoative, non-volitional; unmarked subject:  
gilaas; instrumental adverb: mujhse]
- (viii) *raaj ne mohan ko bevakuuf banaayaa.*  
Raj made a fool of Mohan.  
[complex transitive, marked subject, active, volitional]
- (ix) *riitaa ne mitraa ko ghaRii dii.*  
Rita gave a watch to Mitraa.  
[ditransitive, marked subject, active, volitional]
- (x) *māī usse sab kaam karvaaungaa.*  
I will make him do all the work.  
[causative, unmarked subject, active, volitional]

II. Note the use of bhulaanaa 'forget deliberately', bhuulnaa 'forget accidentally', dhikhaaai paRnaa 'see', dekhnaa 'look', and other underlined items in the following passages.

- a. dhuup kii garmii se sukhii ho kar vah cintaa bhulaane kaa prayatna kar rahaa thaa ki kisii ne pukaaraa...  
Feeling content with the heat from the sun, he was trying to forget his worries when someone called.
- b. 'bhale aadmii, rahe kahāā! saalō par dikhaai paRe...'  
Where have you been, my good man! I haven't seen you for ages...'
- c. sharaabii ne cāūk kar dekhaa. kooi jaan-pahcaan kaa to maaliium hotaa thaa; par kaun hai, yah Thiik-Thiik nahīi jaan sakaa.  
The drunk was startled and looked at (him). He seemed to be familiar; but exactly who he was, the drunk could not think of.
- d. 'oho, raamjii, tum ho, bhaaai, māī bhuul gayaa thaa...'  
Oh, it's you, Ramji, I had forgotten...

'Prasad': madhuua

- e. sacetan mashtishka ko jin baatō kii yaad karne se bhii rok diyaa gayaa thaa, unhiiko acetan mashtishka jiitaa, bhogtaa, jheltaa, sahtaa.  
The unconscious mind lived, experienced, endured, and suffered the very things that the conscious mind was forbidden even to recall.

'Baccan': niiR kaa nirmaan phir

- f. barsaatii baahar rakh do, saaraa kamraa bhigo rahe ho.  
Go put the raincoat out. You are making the whole room wet.

is ghar mē aNDe kaa naam le rahii hoo.. mūh bhraST ho gayaa hogaa.

(You) are mentioning egg in this house... (Your) mouth must have become polluted.

caar din jo aNDe khaa liye hāf, ve chilkō samet vasuul ho jaaenge.

The eggs that (you) have eaten for a few days, (price) will have to be paid for not only the eggs but also the shells.

...saare ghar kaa gangaa ishnaan ho jaaegaa.

There will be bathing in Ganges for the whole house.

...aur jahāā tak ammāā kaa savaal hai, ammāā inhē naalī mē  
 paRe hue bhī nahī dekhengī.  
 As far as mother is concerned, she will not look at them  
 even (if they are) lying in the drain (in plain sight).

Raakesh: aNDe ke chilke

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THE TREATMENT OF TRANSITIVITY IN THE HINDI GRAMMATICAL TRADITION\*

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The aim of this paper is to discuss the treatment of transitivity in the grammatical tradition of Hindi, beginning with the grammars of the seventeenth century. For this purpose, at least fifty traditional grammars, covering the approximately three century old tradition, were analyzed. The treatment of transitivity in the Hindi grammatical tradition reveals the following: One, transitivity in Hindi involves a number of components, only one of which is the presence of an object of the verb. Two, other components require and interact with notions such as case, agency, verb agreement, postpositions, precedence of animate ne subjects over inanimate ne subjects and syntactic deletions, and treat them as the language-specific properties of transitivity. Three, the dynamic and complex nature of transitivity can be witnessed in the number of transitivizing and intransitivizing processes. Four, Hindi verbs cannot be classed into a water-tight traditional classification of transitive and intransitive verbs; there is a significant degree of overlapping between verbs with respect to transitivity and intransitivity. The paper reveals that to the list of the properties of transitivity presented by traditional grammarians, notions such as volitionality and pragmatics must be added in order to arrive at an adequate continuum or treatment of transitivity in Hindi.

The picture that emerges from this historical discussion is not only important from the view point of the syntax and semantics of Hindi but also very crucial for linguistic theory as well as language pedagogy, description and historical development of categories such as compound and causative verbs, dative subjects, ergativity and passivization.

0. INTRODUCTION

This paper presents a brief account of the treatment of transitivity in the grammatical tradition of Hindi, beginning with the grammars of the seventeenth century. For this purpose, at least fifty traditional grammars, covering the approximately three century old tradition, were analyzed. What emerges from this analysis is the following: One: transitivity in Hindi involves a number of components, only one of which is the presence of an object of the verb. Two: other components require and interact with notions such as case, agency, verb agreement, postpositions, particle, etc. Three: the dynamic and complex nature of transitivity can be seen in the number of transitivizing processes and changeable behavior of verbs in the Hindi language. And, Four: the discussion of transitivity in traditional grammars is not only important from the view point of Hindi syntax and semantics but also very crucial for linguistic theory as well as from the point of view of language pedagogy.

## 1.0 THE SYNTAX OF TRANSITIVITY

The primary goal of traditional Hindi grammarians was not to engage in theoretical debates involving transitivity. Placing high priority on language pedagogy, their main aim was to present the paradigms of intransitive and transitive verbs in different tenses. During the initial stages of their task, they were delighted to observe that the conjugation of intransitive and transitive verbs was identical (noting few irregular forms). They loved the Hindi language for its simplicity and identical treatment of the two classes of verbs. Consequently, Ketelaar (1698), Schultz (1745), Hadley (1772) and Ferguson (1773) overgeneralized the identical syntactic behavior of transitive and intransitive verbs and treated sentences such as (1) and (2) as well-formed.

(1) ham piyā  
we drank

(2) tum piyā  
you drank

However, towards the end of the 18th century, their love for the Hindi language began to go sour and the Hindi language began to receive labels such as 'peculiar' and 'strange'. At the root of this estranged relationship was the 'peculiar' syntax of the transitive verbs, formed with past participle. Although some traces of their distinct behavior could be witnessed in the following past tense data presented by Ketelaar (1698) and Schultz (1745),

(3) inne piye the (Ketelaar, 1698)  
this (oblique) had drunk  
'He had drink'

(4) un karaā (Schultz 1745, from  
he (oblique) did Vecchoor, 1976:93)  
'He did'

they did not pay any serious attention to the occurrence of oblique forms of third person pronouns such as in ('this') and un ('he-') with the past tense, nor did they pause to analyze the ne in (3).

The first Hindi grammar to note the distinct syntactic behavior of transitive and intransitive verbs in the past tense was written by Gilchrist in 1796. The ne construction mystified Gilchrist and his contemporary grammarians; and they felt embarrassed for lack of a grammatical terminology to describe the behavior of this construction. Forbes (1855) best summarizes their sentiments regarding their treatment of this construction:

"Our great grammarians have succeeded wonderfully well in mystifying the very simple (though singular) use and application of this particle ne. Dr. Gilchrist, in the first edition of his grammar, seems to have felt greatly embarrassed by it, without exactly knowing what to make of it."

Forbes (1855: 105)

In spite of his doubt, Gilchrist succeeded well in unravelling the mysteries of the ne construction. In his grammar (1796) and several other works, he observed that the use of ne is governed by the 'power of transitive verb' as exemplified in (4).

- (4) mē ne khānā khāyā (1796)  
 I agent food eat  
 I ate food.

Gilchrist noted that in the tenses formed with past participle, a subject takes ne with it. As a result, the verb does not agree with a subject. Instead it agrees with an object.

### 1.1 TRANSITIVITY AND CASE

The integral relationship between ne and object-verb agreement also revealed that transitivity interacts with case in a meaningful way in Hindi. The lack of verb agreement with ne subjects called for a reconsideration of the nominative case in Hindi. Prior to Gilchrist, Hindi grammarians invariably assigned subjects a nominative case for reasons of subject-verb agreement. The object-verb agreement in the ne construction now led them to conclude that in such instances, object takes the nominative case in Hindi. Although Hindi grammars noted sentences such as (5),

- (5) laṅke ne laṅkī ko dekha  
 boy agent girl obj saw (M.Sg past form)  
 A boy saw the girl

no attempt was made to point out the difficulty of assigning a nominative case to an object NP which does not involve verb agreement and which is marked with the postposition ko. Monier Williams was the first to object to the practice of assigning nominative case to such object NPs. In order to find a solution to this problem, or avoid the whole issue, grammarians such as Yates (1827) and Forbes (1855) turned their attention to the ne subjects again. On the basis of diachronic and quasi-semantic (translational) evidence, they postulated cases such as ablative or instrumental for the ne subjects. Drawing evidence primarily from Sanskrit and secondarily from Latin, Forbes (1885) concluded that in sentences such as (4) and (5),

"Nominative case changed into that form of the  
 ablative expressive of agent."

(Forbes, 1855: 53)

The basis of this conclusion was his observation that the ne construction originated from the Sanskrit apādāna kāraḥ (marker epa) and in Sanskrit ablative case<sup>1</sup> is found wherever ne is used in Hindi. Such a conclusion was also arrived at, with some minor changes though, by Yates. Rather than utilizing historical linguistic evidence, he employed quasi-semantic or translational evidence and concluded that

"The instrumental case is always used instead of the nominative, before transitive verbs in the perfect tense or its formatives, (in such instances the transitive verb), though active in its termination, is passive in its signification."

(Yates, 1827: 20)

This led Yates to interpret sentences such as (6) as "by the woman, an answer was given".

- (6) aurat ne zavāb diyā (Yates, 1827: 20)  
 Woman by answer gave  
 By the woman, an answer was given.

Finally, during the twentieth century, grammarians closed the whole issue of case marking by postulating a new and more satisfactory case, "Agentive case-ne" (See Scholberg, 1940). This case was not only semantically motivated but also explained the syntactic behavior of nouns which is not shared by subject NPs in the nominative case. At the same time, it also dismissed the objections raised against assigning instrumental or ablative case to the ne subject.

## 1.2 AGENCY

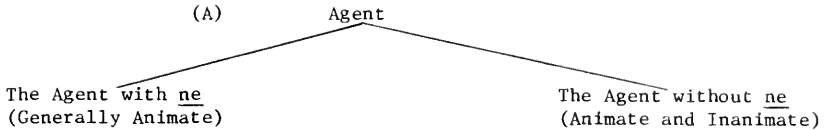
In addition to the interaction of transitivity with subjects, verb agreement and cases, Hindi grammarians, in the middle of the nineteenth century, also noticed the ability of transitivity to interact with a specific class of agents. During the discussion of instrumental or passive case, Monier Williams (1876) made an insightful observation that the ne construction is not only sensitive to a transitive verb but also to the animacy of a subject. He observed that although ne can occur with inanimate subjects as is evident by sentences such as (7) and (8),

- (7) bādshāh ke lahū ne joś mārā  
 king of blood agent excitement took  
 The king's blood boiled. (Williams, 1876: 127)
- (8) is bāt ne mujhe xarāb kiyā  
 this matter agent me bad did  
 This thing ruined me. (Williams, 1876: 127)

it is not a common practice to use ne with an inanimate subject. Instead, it is preferred to use an intransitive verb and se postposition with the inanimate subject as in (8a)

- (8a) is bāt se mē xarāb huā  
 this thing by I bad happened  
 This thing ruined me.

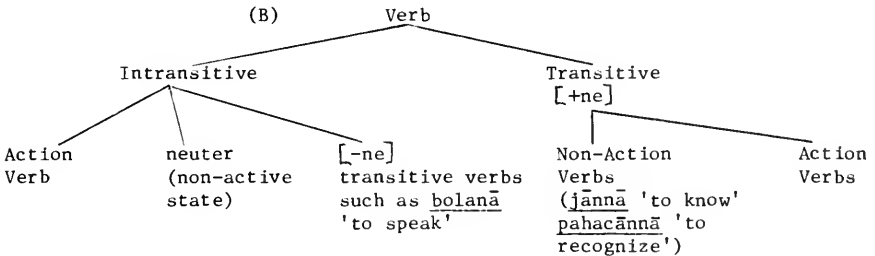
This led Hindi grammarians to postulate the following two types of agents in the Hindi language:



Forbes and others stressed that "the agent with ne should be termed 'special agents', because they are restricted in use." They are generally animate subjects which occur with a class of transitive verbs (formed with past participle). The -ne agents are employed by intransitive or neuter verbs and transitive verbs such as bolnā 'speak', lanā 'bring', larnā 'to fight', and they can be either animate or inanimate.

### 1.3 TRANSITIVITY AND VERB CLASSIFICATION

On the basis of their analysis of Hindi, it became quite apparent to Hindi grammarians that the traditional notion of transitive verbs (object N/NP) was not sufficient to account for transitivity and intransitivity in Hindi. Therefore, they also used additional criteria to classify Hindi verbs. However, to do so, they did not abandon the traditional classification of intransitive and transitive verbs. They attempted to capture the idiosyncratic syntactic behavior of Hindi verbs without sacrificing the traditional notion of transitivity. In addition to the traditional criterion, they listed some new features of transitivity in Hindi and finally, arrived at the following classification of the Hindi verb:



The inclusion of ne to define transitivity in Hindi did not win approval without debate; it registered several protests in the Hindi grammatical tradition. Notably Platts (1873: 171) opposed the tendency of treating -ne verbs such as lanā 'to bring' and compound verbs such as likh bethnā 'to write' as intransitive on the basis of the fact that they are considered transitive verbs by the native speakers and grammarians.

### 1.4 POSTPOSITION/PARTICLE/EXPLETIVE

Having observed the interaction of ne with transitive verbs, Hindi grammarians also addressed themselves to the question of treating ne as a postposition. Gilchrist assigned a totally new label, "expletive", for ne. Although his followers employed this label for about half a century, it was frequently felt that the label was inadequate and lacked any serious motivation. Therefore, they began to search for a new label and, consequently, switched in favor of a better term - particle. It was

further noticed that the term 'particle' fails to account for the fact that ne acts like a postposition in the sense that it requires an oblique case with an NP. This led the 19th century grammarians and modern grammarians to treat ne as a postposition, especially sensitive to transitivity. They also observed that postpositions such as se, ko and o are sensitive to transitivity in Hindi. The intransitive subjects take either se, o or ko postposition whereas ko is generally used with animate objects and sometimes with inanimate objects.

### 1.5 TRANSITIVITY AND DELETION

With regards to deletion and transitivity, the traditional grammarians stressed the following two facts: One: if the two subjects of a conjoined sentence are correferential but one is the non-ne subject and the other is a +ne subject, the second subject can be deleted. Consider the following two sentences:

- (9) faqīr āyā or o sawāl kiyā  
 saint came and o question did  
 A saint came and o asked a question.  
 (Williams 1876: 127)

- (10) mē ne ye bāt sunī or o bolā  
 I agent this talk heard and o spoke  
 I heard this speech and o said  
 (Williams 1876: 127)

Williams and others pointed out that in (9), the [+ne] subject (i.e., faqīr ne) in the second conjunct does not need to be spelled out and similarly, the [-ne] subject (i.e., mē 'I') can undergo deletion in (10). However, in spite of the deletion, the deleted subject continues to remain sensitive to the transitivity or intransitivity of a verb, for native speakers will supply only the [+ne] subject and [-ne] in (9) and (10), respectively and not vice versa. Two: a surface deletion of an object NP in some verbs, converts a transitive verb into an intransitive verb. Consider the following sentences (11-12a).

- (11) mē ne gānā gāyā  
 I agent song sang  
 I sang a song.
- \* (11a) mē gāyā  
 I sang  
 I sang.
- (11b) mē ne gāyā  
 I Agent sang  
 I sang.
- (12) bacce ne khel khelā  
 child Agent game played  
 A child played a game.
- (12a) baccā khelā  
 child played  
 A child played.

Notice that in (11) if an object is deleted, such deletion does not trigger the deletion of ne. This explains the ill-formedness of (11a). However, if an object of the verb khelnā 'to play' is deleted, the verb does not obligatorily require the ne with the subject. This explains why (12a) is acceptable to Hindi speakers. Therefore, the traditional grammarians assigned a small class of verbs such as khelnā 'to play' dual membership and explained that they are both transitive and intransitive.

## 2.0 DYNAMIC/NON-STATIC NATURE OF HINDI TRANSITIVITY

What captivated the traditional grammarians the most was the changeable behavior of verbs in Hindi; this led them to a very detailed discussion of the transitivity and intransitivity processes of Hindi verbs. Their analysis of Hindi and its comparison with their native language (i.e., English) soon revealed that several syntactic and morphological processes can convert a transitive verb into an intransitive verb or vice versa. Before the emergence of the twentieth century, they had enumerated the following main transitivity and intransitivity processes.

### 2.1 TRANSITIVITY PROCESSES

The earliest Hindi grammarians (17th and 18th century) not only observed some important transitivity processes such as causativization, but went beyond purely linguistic observations. They recorded their interesting and subjective reactions (value judgements) together with a list of such processes. Consider for example, John Ferguson's (1773) reaction to causative verbs:

"There is a particular species of verbs in the Hindustan (Hindi) for which it is difficult to find a proper name, but whose character is to express not any action but causing of an action. It is no small advantage in the Hindustan (Hindi) to have a particular species of verbs to express this particular meaning."

Ferguson (1773: 57)

#### 2.1.1 CAUSATIVIZATION/TRANSITIVITY PROCESSES

From Gilchrist (1796) onwards, every grammarian discussed the process of causativization. They unanimously agreed on the derivational nature of causative verbs; and hence, derived them primarily from intransitive verbs. A general rule presented by them to derive causative verbs is given below:

- (13) By inserting long vowel -ā and wā to the root of an intransitive verb, the verb becomes transitive and causal, respectively. Example:

<u>Intransitive</u>	<u>Transitive</u>	$\Rightarrow$	<u>Causal</u>
paknā 'to be cooked'	$\Rightarrow$ pakānā	$\Rightarrow$	pakwānā

The derivation and basic patterns of causative verbs from intransitive verbs and transitive verbs is summarized in Table 1 and Table 2, respectively.

TABLE 1

Pattern	Intransitive		Transitive		
	Non-active	Active	Transitive [-causal]	First Causal	Second Causal
1.	- -	sonā 'to sleep'	- -	sulānā 'cause X to sleep'	sulwānā 'to cause X to cause Y to sleep'
2.	bannā 'to be made'	- -	banānā 'to make'	banawānā 'to cause to be made'	- -
3.	piṭnā 'to be beaten'	- -	pīṭnā 'to beat'	piṭwānā 'to cause to beat'	- -
4.	bigaṇnā 'to be spoiled'	- -	bigaṇnā 'to spoil'	bigarwānā 'to cause to be spoiled'	- -
5.	ghirnā 'to be surround- ed'	- -	ghernā 'to surround'	ghirānā 'to cause to be surround- ed'	- -
6.	- -	calnā 'to move'	- -	calānā 'to cause X to move'	calwānā 'to cause X to cause Y to move'
7.	- -	bēṭhnā 'to sit'	- -	bēṭhānā 'to seat'	biṭhawānā 'to cause X to cause Y to sit'
8.	- -	bhāgnā 'to run'	- -	bhagānā 'to cause X to run'	bhagwānā 'to cause X to cause Y to run'

Traditional grammarians noticed that non-active/stative verbs yield only transitive and first causative. They fail to yield 2nd causal verbs (except *sonā*). Active intransitives, on the other hand, generate both the causals but do not produce transitives [-causal]. In this sense they exhibit a complementary behavior.

TABLE 2

Pattern	Transitive [-causal]	Transitive	
		First Causal	Second Causal
1	karnā 'to do'	karānā/karwānā 'to cause X to do'	
2	khānā 'to eat'	khilānā 'to cause X to eat'	khilwānā 'to cause Y to cause X to eat'



## 2.1.2 CONJUNCT VERBS

Transitivity can be induced in nouns, pronouns, adjectives and adverbs; and they are converted into transitive verbs by the addition of transitive verbs such as karnā 'to do', lenā 'to take', denā 'to give', laganā, and marnā as shown in the following examples:

- |      |               |                     |
|------|---------------|---------------------|
| (14) | bāt karnā     | 'to talk'           |
|      | apnā karnā    | 'to make one's own' |
|      | acchā karnā   | 'to cure'           |
|      | dhīre karnā   | 'to slow down'      |
|      | nishānā marnā | 'to aim'            |

## 2.1.3 NOMINAL VERBS

Some few transitive verbs are formed by the addition of the infinitive marker nā or by inserting -ā between a noun or pronoun and infinitive marker. Consider the following examples:

- |      |             |             |   |          |                     |
|------|-------------|-------------|---|----------|---------------------|
| (15) | dukh (noun) | 'pain'      | ⇒ | dukhānā  | 'to cause pain'     |
|      | apnā (pro.) | 'reflexive' | ⇒ | apnānā   | 'to make one's own' |
|      |             |             |   | pronoun' |                     |

## 2.2.2 INTRANSITIVIZING PROCESSES

2.2.2.1 Complex Verbs

Intransitive verbs are derived by adding intransitive verbs such as honā 'to be', ānā 'to come', lagnā 'to a noun, pronoun, adjective and adverb.

- |      |                |                      |
|------|----------------|----------------------|
| (16) | pasand honā    | 'to like'            |
|      | gussā ānā/honā | 'to become/be angry' |
|      | acchā lagnā    | 'to like'            |
|      | acchā honā     | 'to recover'         |
|      | dhīre honā     | 'to slow down'       |
|      | apnā honā      | 'to be one's own'    |

2.2.2.2 Compound Verbs

Transitive verbs behave like an intransitive verb when followed by an intransitive verb. For example, the traditional grammarians pointed out again and again that although verbs such as khānā 'to eat' are transitive verbs in the sense that they take ne with a subject in the past tense. However, if a compound verb kha bēṭhnā or kha cuknā<sup>2</sup> is employed instead of its simple verb counterpart, the compound verb ceases to be a transitive verb, i.e., [+ne] verb, as shown in the following examples of Gilchrist.

- |      |                         |                      |
|------|-------------------------|----------------------|
| (17) | mē ne khānā khāyā       | (Gilchrist 1808: 31) |
|      | I Agent food ate        |                      |
|      | I have eaten my dinner. |                      |
| (18) | mē khānā khā cukā/bēṭhā | (Gilchrist 1808: 31) |
|      | I food eat done/sat     |                      |
|      | I have done eating.     |                      |

The above observation enabled them to explain the intransitive behavior of the verb lānā 'to bring'. According to them, it is derived from lenā 'to take' and ānā 'to come'. For the same reason, the verb lenā which is a transitive verb (+ne verb) acts like intransitive verbs in the following set of compound verbs.

- (19) le ānā 'take + come' = 'to bring'  
 le jānā 'take + go' = 'to carry'  
 le calnā 'take + walk' = 'to carry/load'

#### 2.2.2.3 "dikhāī denā" - type

It was also noticed by Gilchrist and others that transitive verbs such as lenā and denā always behave like intransitive verbs when formed as a part of a verb with sunāī and dhikhāī.

#### 2.2.2.4 Onomatopoeic

Traditional Hindi grammars also reveal that onomatopoeic verbs are intransitive in Hindi. For example, verbs such as chahcahāna 'to twitter' are intransitive.

### 3.0 THE SEMANTICS OF TRANSITIVITY

Although traditional grammarians made use of grammatical as well as semantic notions such as case, animacy, direct and indirect agents, action and non-action verbs in their treatment of transitivity and causation, semantics represented one of their weakest areas. Traditional grammarians sometimes gave this impression that they were reluctant to enter into this area of Hindi grammar. They engaged themselves in a long discussion of distinguishing between passive voice and passive case in sentences such as (20) and (21).

- (20) mujh se galtī huī  
 me by mistake happened  
 I committed a mistake.

- (21) mujh se kitāb paṛhī gayī  
 me by book read went  
 A book was read by me.

According to them, in (20), the subject NP is in the passive case because of the presence of an active intransitive verb, whereas (21) is an example of passive voice. They rightly observed that the ne marks an agent of a transitive verb and preferred to treat it as an agentive case marker rather than a passive, ablative or an instrumental case marker. They also dwelled on the dative marker ko. However, they seriously fell short of capturing the semantic core of transitivity. They failed to observe the relationship between transitivity and volitionality as explained in Verma (1971) and Kachru (1982). Also, no attempt was made to discuss dative subjects nor was any relationship between psychological predicates/intransitive verbs (such as used in (20)), and non-volitionality established. Occasionally they attempted to account for the semantics of the ko subjects, however their

analysis was inadequate because they treated the ko with a subject as a marker of possession of material, mental and moral qualities. ((See Greaves (1919: 106), Kellogg 1875: 403) ). In this sense, traditional grammars did not have much success in accounting for the semantics of transitivity or intransitivity in Hindi.

#### 4.0 CONCLUSIONS

From the above discussion, the following conclusions can be drawn about transitivity in Hindi. Traditional grammars employed and listed a number of defining features of transitivity. In addition to the presence of an object, they listed ne subjects, object-verb agreement, postpositions ko, se, precedence of animate ne subjects over inanimate ne subjects, syntactic deletion as other properties of transitivity in Hindi. While listing the set of additional features, they often reminded their readers that these features distinguish between transitive and intransitive verbs in a 'peculiar' way, implying that these additional features represent idiosyncratic or language specific features of Hindi transitivity and by no means are treated as universal. Also, they observed that a static or universal notion (presence of an object) was not sufficient to account for transitivity in Hindi. They enumerated several processes which convert a noun, adjective, pronoun, adverb and an intransitive verb into a transitive verb; and a transitive verb, noun, adjective, adverb, pronoun and an onomatopoeic item into an intransitive verb. In addition, they noticed that Hindi verbs cannot be classified into a water-tight traditional classification of transitive and intransitive verbs; there is a significant degree of overlapping between verbs with respect to transitivity and intransitivity (See Comrie 1979). This overlapping can best be captured by way of postulating a continuum of transitivity as proposed by Hopper and Thompson (1980). Hindi verbs do not simply represent two end points in a continuum of transitivity but also occupy several intermediate points on the continuum as shown in Table 3.

The above observation is in agreement with Pandharipande's (1982) findings. Furthermore, it should be added that some verbs exhibit an inherent potential to occupy the two poles on the continuum at the same time because of their dual membership in the two classes of verbs, i.e., transitive and intransitive verbs. What is even more important is the fact that if all intransitivizing and transitivity processes are to be accounted for a dynamic conception of the continuum, where the points will not occupy a fixed position, is necessary. To the list of the properties of transitivity presented by traditional grammarians, another feature, volitionality proposed by Verma (1971) and Kachru (1982), must be added in order to account for the fact that verbs such as nishānā cūkṅā 'to miss a target' are inherently intransitive in Hindi and they never permit the ne construction and passivization. Consider the following sentences (22-24).

- (22) mujh se nishānā cūkā  
 me by target missed  
 I missed the target.
- \* (23) mē̃ ne nishānā cūkā/cūkāyā  
 I agent target missed  
 I missed the target.



- \*(24) mujh se nishānā cūkā/cukayā gayā  
 me by target missed went  
 The target was missed by me.

The verb nishānā cūkṅā 'to miss a target' is inherently intransitive in Hindi because one does not miss a target intentionally under normal circumstances. Finally, it should be added that the tests/features outlined above do not carry equal weight. In terms of their weight, the following tentative rank ordering of features is imperative in order to arrive at an adequate continuum or treatment of transitivity in Hindi.

Pragmatics<sup>3</sup> > Volitionality > Passivization > ne > object-verb agreement/object NP > animacy

Pragmatics or volitionality is likely to yield a higher degree of transitivity in a verb than does the ne construction or the presence of an (object) NP. Similarly verbs which permit passivization are likely to be more transitive in Hindi than verbs which allow the ne construction.

#### NOTES

\*This paper was presented at the tenth annual conference on South Asia, University of Wisconsin, Madison. My thanks are due to Professor Y. Kachru and Professor Hans H. Hock for their comments on this paper. The paper is especially benefited by the comments of Professor M.K. Verma who served as a discussant during the conference.

<sup>1</sup>According to Professor Hans H. Hock, European grammarians employed the term 'Instrumental Case' to refer to the Sanskrit 3rd case whereas the term 'Ablative' was used in the context of the Latin language.

<sup>2</sup>Although the modal cukṅā is not a verb, the traditional grammarians treated it as a verb because of its identical syntactic behavior with operators.

<sup>3</sup>For the motivations for including pragmatics on the continuum, see Pandharipande (1982).

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REFERENCE MATERIAL IN HINDI: STATE OF THE ART

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In the post-independence period of India we have seen considerable activity in major Indian languages for making available reference materials, generally not available before 1947. There is no doubt that in initiating and coordinating such activities a significant role is being played by the regional language academies and other learned societies.

I shall briefly discuss below the current state of such reference materials in Hindi, the national language of India. In its various varieties Hindi is spoken by about 46 percent of India's population and its use is fast spreading in the Sub-continent. It is therefore essential to evaluate various types of resources in this important link language.

In this study I have taken a sample of about 350 sources in Hindi published since 1947. The sample has been divided into the following categories:

Table Showing the Types of Reference Materials

Dictionaries

Hindi-Hindi	= 24	
Hindi-English	= 24	
English-Hindi		
Hindi-Other languages	= 50	
(except English)		
Terminology	= 70	
Usage, idioms	= 16	
		= 184

Encyclopaedias

General	= 6	
Subject	= 20	
		= 26

Yearbooks = 3

Directories = 3

Bibliographies  
(all types, including  
subject) = 40

Statistical Sources = 34

<u>Literature</u>	
(Dictionaries, concordances, etc.)	= 28
<u>Religion</u>	
(Concordances, dictionaries, etc.)	= 16
<u>Biographical Dictionaries</u>	= 7
<u>Geographical Sources</u>	= 4
<u>Miscellaneous</u>	= 4
Total	<u>349</u>

See Appendix for a list of the above Reference Materials.

### Dictionaries

Dictionaries (śabdakośa) constitute the biggest portion (approximately 55 percent) of all the Hindi reference sources; it is indeed a large percentage and this type of imbalance does not exist in languages like English. However, the earlier tradition of lexicography in Hindi essentially follows the tradition of Sanskrit lexicography, though later there has been great influence of English lexicographical tradition, too. After Indian independence several good Hindi dictionaries have appeared: Nalanda viśāla śabdasaḡar, edited by Navalaji (Delhi: Adis buk depo, 1950); Mānaka Hindi kośa, edited by Ramcandra Varma (Prayag: Hindi sahitya sammelana, 1962-66. 5 vols.); Brhat Hindi kośa, (śabda samkhyā 1,38,000) edited by Kalika Prasad and others (3.ed. Varanasi: Jñānamandala, 1965); Hindi śabdasaḡara, edited by Syamasundara Dasa (rev.enl. & new ed. Varanasi: Kasi Nagari Pracharini Sabha, 1965-75. 11vols.); A practical Hindi-English dictionary (Vyāvahārika Hindi-Aḡreji kośa) edited by Mahendra Chaturvedi & B.N.Tiwari (Delhi: National Publishing House, 1970) are useful dictionaries. English to Hindi dictionaries are also numerous: Brhat Aḡreji-Hindi kośa (Comprehensive English-Hindi dictionary) by Hardev Bahri (Varanasi: Jnanamandala, 1960); A comprehensive English-Hindi dictionary of governmental & educational words & phrases, by Raghu Vira (4th ed. New Delhi: International Academy of Indian Culture, 1963); Aḡreji-Hindi kośa (An English-Hindi dictionary) by Camille Bulcke (Ranchi: Kathalik Pres, 1968); Mānaka Aḡrezi-Hindi kośa (Standard English-Hindi dictionary) edited by Satyaprakasa and Balabhadra Prasada Misra (Prayag: Hindi Sahitya Sammelana, 1971); The Oxford progressive English-Hindi dictionary = Oksafard progresiv Aḡrezi-Hindi kośa, by S.K.Verma and R.N.Sahai (Delhi: Oxford University Press, 1977) are all helpful to learners and users of Hindi. However, there still is need for a authentic Hindi-English and English-Hindi bilingual dictionary.

There are several other bilingual dictionaries of Hindi and other Indian languages, e.g. Samāna śrota aurā bhinna vartani ki śabdāvalī, Asamiya-Hindi aurā Hindi-Asamiya, by Vijayaraghava Reddi (Agra: Kendriya Hindi Samsthana, 1976); Hindi Baḡgala abhidhāna



(Calcutta: Bengal Mass Education Society, 1958); Hindi-Marathi śabdakośa, edited by G.P.Nene and Sripada Josi (Pune: Maharashtra Rashtrabhasha sabha, 1967); Amara kośa; Hindi-Marathi-Hindi, edited by Sumera and Lilavati (Solapur: Surasa granthamala, 1963); Khindi-russkii slovar (Moscow, 1972). There are a large number of dictionaries of terminology: Akaśavānī śabdakośa, A.I.R. lexicon (New Delhi: Akasavani ke samacara vibhaga dvara prakasita, 1970); Aṅgreji-Hindi Śri Aravinda śabdakośa, English-Hindi dictionary of Sri Aurobindo's terms, by Kesavadeva Acarya (Pondicherry: Diva jivana sahitya prakasana, 1969); Padanāma śabdāvalī, Aṅgrezi-Hindi (Glossary of designational terms, English-Hindi) put out by Standing Commission for Scientific and Technical Terminology (New Delhi, 1965). These are mainly from English to Hindi. The existence of a large number of such publications is understandable. When Hindi became the national language of India it was realized that standard terminology did not exist in that language. A special body (Standing Commission for Scientific and Technical Terminology) was set up in October 1961 for coining terminologies. Central Hindi Directorate, New Delhi, under the Ministry of Education and some other bodies also engaged themselves with terminology building. Some state governments also set up bodies for building terminologies mainly for official purpose, e.g. the states of Bihar, Madhya Pradesh, Uttar Pradesh. All these efforts resulted in several volumes of Hindi terminology. These were overlapping and caused even some confusion. The most authoritative work is Brhat pāribhāshika śabda saṅgraha (Comprehensive glossary of technical terms: Science) in 2 volumes published in 1973 by the Standing Commission for Scientific and Technical Terminology. This glossary consists of technical terms in science which has so far been finalized by the Commission for Scientific and Technical Terminology. It comprises equivalents of about 1,30,000 terms in botany, chemistry, geography, geology, home science, mathematics, physics and zoology up to the postgraduate level. The work on this glossary started in 1952 and was the result of concerted efforts of the Ministry of Education and its different organizations through a careful process of evolution, standardization and coordination. It is now undergoing a revision.

### Encyclopaedias

The first Hindi encyclopaedia Hindi viśva kośa (Encyclopaedia Indica) was published in 1916-32 (25 volumes) which was a Hindi version of Bengali encyclopaedia of Nagendranath Vasu with additions and alterations. It was followed by Hindi viśva bharati (1939) from Lucknow visvabharati karyalaya, in 10 volumes (second edition in 1958-65). Both of these are out of date. Sachitra viśva kośa (1967) in 10 volumes published by Rajpal which is based on American golden book encyclopaedia fills the gap to some extent.

That leaves us with Hindi visva kośa (1960-70) in 12 volumes published by Nagari Pracharini Sabha, Varanasi. This was financed by the government of India, and received cooperation of several scholars. But most of the technical articles are translations from the Encyclopaedia Britannica and other sources. However, some articles on Indian religion, history, culture, etc. are original. It is being revised now, however, only the 1st volume has come out so far (1973), which shows that the rate of revision is very slow.

Other encyclopaedias like Viśvajñāna sāgara (A Hindi encyclopaedia, 1962) and Viśvajñāna kośa (1964) are one volume encyclopaedias and are not very comprehensive. Recently K.C.Suman has launched a reference book project called Diwangat Hindi-Sewi [past scholars of Hindi]; this project provides for publication of an encyclopaedia in 10 volumes, the first of which has already been released.

Compiling an encyclopaedia is an expensive proposition. It requires a great deal of planning, organizing acumen and selfless devoted work. Its success also depends on the availability of contributors who know the subject well and can express complicated ideas in a non-technical style. Hindi and other Indian languages do not always fulfil these prerequisites. A good Hindi encyclopaedia under the present circumstances is a difficult proposition unless a permanent body is created for the purpose on the lines of the one on Hindi terminology. It may not be a viable commercial proposition, otherwise, a commercial publisher could be involved in this work.

Subject encyclopaedias are rather late comers. They are small, mainly confined to social sciences and humanities and among the sciences, only ayurveda. Invariably they have very short articles, unsigned and without any references or bibliographies.

One of these is Mānavikī pāribhāshika kośa (Encyclopaedia of Humanities) edited by Nagendra (Rajkamal, Delhi, 1965-68). So far only three volumes have been published: these volumes cover sāhitya (literature), darśana (philosophy), and manovijñāna (psychology). The editors have planned to finish up the whole project in five volumes and the remaining two volumes will cover samāja śāstra (sociology) and lalita kalā (fine arts). This is the first venture of its kind and promises to be a very comprehensive encyclopaedia. Some of the others like sikshā kośa, arthaśāstra kośa are arranged by English terms with Hindi equivalents and meanings, followed by brief articles. Atmanand Misra, editor of sikshā kośa, gives one reason for this practice. He claims that Hindi terminology has not been standardized as yet. For one English term there are several Hindi equivalents, none of them as yet accepted as the equivalent, and all of them used simultaneously by various authors. This appears to be a genuine problem as has been discussed in several studies, e.g. see Kachru 1976.

### Yearbooks

The only yearbook published is Bharata, a translation of A reference annual, issued by the Ministry of Information and Broadcasting, Government of India. Some state governments like Bihar and Uttar Pradesh also publish yearbooks but they are very irregular. Even Bharata cannot be compared to yearbooks such as Statesman's Yearbook, or even Manorama Yearbook. Because it covers only one country and gives only the official point of view, it is more of an official handbook. There is a great need for a Hindi yearbook which should be a commercially viable proposition.

### Bibliographies

There have been several attempts at Hindi bibliography including Indian National Bibliography (INB). Such attempts however are rather amateurish and irregular. INB is based on the books deposited at the National Library, Calcutta, under the provisions of the Delivery of Books (Public Libraries) Act of 1954, as amended by Act no.99 of 1956, but as we know, it has not been a great success. Besides the time lag and irregularity, INB is not by any means a current comprehensive bibliography of Hindi books. The only regular and most current bibliography available these days is the Accessions List published by the U.S. Library of Congress Office, New Delhi. However, it is not meant to be a Hindi bibliography.

There does not exist any retrospective comprehensive bibliography. Hindi s̄ahitya s̄arini (1971-74; in 2 volumes) covers upto 1964. It is a detailed bibliography of Hindi books published through 1964. Hindi s̄ahitya: ālocanā grantha s̄ūci, published in 1971 by Bharatiya grantha nicketana, Delhi, covers publications from 1947-1971. Hindi ālocanā kośa published by Bharatiya grantha nicketana, Delhi, came out in 1978. Both of these are detailed bibliographies on Hindi literature and list publications pertaining to criticism and linguistics. Hindi grantha kośa, 1976, 1977, 1978, published in 1979 by Bharatiya grantha nicketana, Delhi, covers publications in Hindi published during 1976, 1977 and 1978. It is an uphill task for any reference librarian to respond to bibliographic questions about Hindi publications.

Even subject bibliographies are rare. My own bibliography A Bibliography of Studies on Hindi Language and Linguistics published in 1978 by Indian Documentation Service, Gurgaon, covers the publications in Hindi language and linguistics. It has filled up some of the gaps in this particular area and its revised edition is actively in progress. Regarding this bibliography Yamuna Kachru of the University of Illinois has said that "It is the single source of information on what has been/is being done on Hindi in India and centers of Hindi studies in the Western Hemisphere". There have also been sporadic attempts at bibliographies of Hindi literature. It seems to me that it is in this field where librarians can contribute the maximum.

As far as bibliographic control of periodical publications goes, there continues to be a serious gap. Only one volume of Hindi sandarbha (1969) was published by the Rajasthan University Library, Jaipur. We badly need a publication on the lines of Index India, or Guide to Indian Periodical Literature. Again, librarians are the only organized group of professionals who can undertake such major projects with competence.

### Biographical Sources

There is hardly any biographical source of Who's who type or even a comprehensive biographical dictionary. Hindi sāhitya kośa was published in 1958-63 in 2 volumes by Jnanamandala, Varanasi. Volume one of this kośa gives definitions on almost all aspects of literature by authorities on the subject; volume two contains biographical account of authors born until 1915 and their works published until 1950. This work is arranged alphabetically and gives descriptive account of the historical characters frequently used in Hindi literature. Eholanath Tiwari's Hindi sāhitya kī antarkathāem, published in 1962 by Kitab mahal, Allahabad is one of the latest biographical dictionaries of historical names occurring in Hindi literature. Sāhityika kośa published in 1973 by Sahitya samaroha, New Delhi, describes 2500 literary authors and journalists and includes a "Who's who" of 200 literary persons in Hindi. There seems to be a great need for a good retrospective biographical dictionary as well as a current biographical Who's who in Hindi.

### Geographical Sources

A dictionary of historical and religious places, a geographical dictionary, a contrived tourist guide and a national atlas (bilingual) and a couple of school atlases - these provide the total of geographical sources in Hindi.

### Directories

There is hardly any directory available in Hindi worth the name. This is an area which deserves special attention of publishers and Hindi organizations.

### Statistical Sources

The number of statistical sources in Hindi is increasing day by day. Ministries of the Central government, Central Statistical Organization, State governments of Hindi speaking states, especially Madhya Pradesh, Rajasthan and Uttar Pradesh, and the Reserve Bank of India are bringing out several statistical sources in Hindi. Some of them are bilingual (English-Hindi); others are exclusively in Hindi. In the sample under discussion, 34 sources are listed and this list certainly does not exhaust the statistical sources available in Hindi.

It can be hoped that many more statistical sources will be available in Hindi with the passage of time.

Literary Dictionaries, Concordances, etc.

The predominance of reference books on literature as compared to other subjects becomes immediately apparent when one takes a census of Hindi reference sources. That only shows that Hindi is essentially a literary language and is still struggling to be a language for scientific study and expression.

In the sample, 28 literary sources are listed. There could be a few more. These are in the nature of dictionaries, concordances and a few literary encyclopaedias. These cover either the entire literary forms, or one form like drama, or an individual author. The latter type of works are new comers but their number is fast increasing. In spite of numbers, a good literary encyclopaedia on the lines of Oxford Companions has yet to come. The most comprehensive one of these is Hindi s̄ahitya koṣa, edited by Dharendra Varma and others (2.ed. Jnanamandala, Varanasi, 1963-64. 2 volumes) but it does not include authors or their works. It is mainly concerned with literary forms.

Religion: Concordances, Dictionaries, etc.

There is a strong hold of religion on the Indian mind which is evident in the number of reference works. In the sample, 16 such works are included. These cover entire Hinduism or Jainism, or are confined to sacred books like Mahabharata, Puranas, Ramayana, Vedas, etc. Apparently these works are inspired by their Sanskrit counterparts and we should be ready to receive more of such works in our libraries.

This brief survey of the current Indian reference sources in Hindi show that the picture is not at all encouraging. There are however, some bright spots such as dictionaries of religion, language and literature and to some extent statistical sources. The darkest spots are bibliographies, directories, encyclopaedias, yearbooks, biographical sources. One might ask: Why are there such substantial gaps, and why the quality of some of the reference materials is poor. Perhaps some of the reasons are: In spite of all-out efforts by the government of India and some dedicated individuals, Hindi terminology has yet to be standardized. Terminology is the prerequisite of several types of reference books. In the beginning there must be the word; but there is also another force which influences the development of language; it is individuals and groups who can generate a momentum around a linguistic cause among the users of the language. This momentum takes the shape of a movement with varying degrees of cohesion and sustenance. The

movements bring about change by forcing the government to pursue a particular policy or by winning the people to a particular point of view. Exclusively government directed efforts in this direction are doomed to fail. Artificial coining of terminology can only succeed to a very limited extent. There will always be new subjects and new terms without equivalents in Hindi. The reason being that our scientist neither read nor write in Hindi. This language is not in the forefront of knowledge. There is a tremendous gap between knowledge existing in international languages like English and that available in Hindi. And this gap is widening everyday.

As already stated, coining of terminology by committees is a very cumbersome and time-consuming process. It is artificial, too. Terms coined by this process do not become very popular. The policy of coining terms from Sanskrit roots has also something to do with the slow progress of terminology. This policy has been partially modified lately and now terms from other languages are accepted as such in the Hindi language. But it seems that this policy has to be used more generously.

The rate of translation from English and other foreign languages is very slow. Translation work has been confined mainly to the textbooks. Original monographs and periodical articles are hardly being translated. To increase knowledge in Hindi, translation work has to be organized on the lines it is done in the Soviet Union, China and Israel. It is very essential that a body of knowledge exists in a language before it could be sifted, condensed and conveniently arranged in the form of reference books.

It is a moot point whether the compiling of reference sources is dependent on the type of reference service offered in the Indian libraries. Necessity is the mother of invention, as the saying goes and there is some truth in it. Librarians collectively can point out the type of reference books in Hindi which are urgently required. And they can get some government body or commercial publishers interested in the compilation and publication of some types of reference books.

During my research and acquisition trips to India in the past several years I have felt that librarians have not played their part very effectively in indicating the need for reference books in Hindi; nor have they done much to compile them and to get them published. I know that there are many young and bright librarians in India, a small committee of whom could go into the details of unrepresented areas for Hindi reference sources and give suggestions for their compilation and publication. Some of the reference books, like a yearbook, should be a viable proposition commercially. But the greatest contribution librarians could make is in the field of compiling bibliographies which are the core of any reference materials.

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