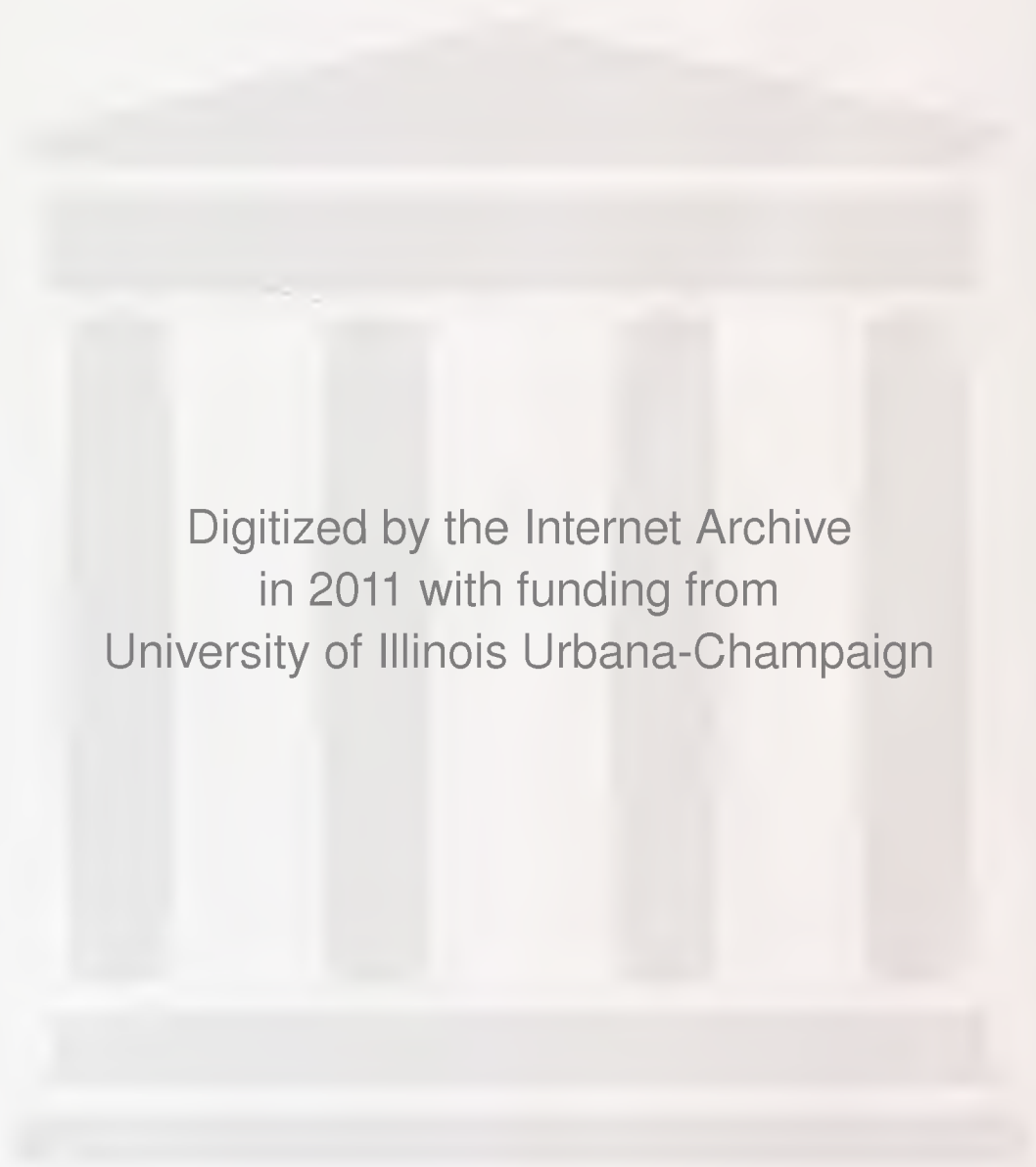


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Faculty Working Papers

INDIVIDUAL VERSUS GROUP-ASSISTED AUDIT EVALUATIONS--
AN EMPIRICAL STUDY OF CONTINGENCY EVALUATIONS WITHIN
THE CHOICE-SHIFT FRAMEWORK

Philip M. J. Reckers, Assistant Professor of
Accountancy at the University of Maryland, and
Joseph J. Schultz, Jr., Assistant Professor of
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College of Commerce and Business Administration
University of Illinois at Urbana-Champaign

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Abstract:

The major purposes of this study were to relate the existing choice-shift research to the audit environment and to study empirically the effects of: (1) materiality; (2) authoritative status; (3) communication channel; (4) relative client size; and (5) individual-versus group-assisted contingency evaluations in an audit setting. The subjects of the experiment were 120 senior accountancy students who were in the last semester of their undergraduate curriculum and who were completing their second semester-long auditing course. The task was to determine the probability level at which a contingency loss must be disclosed in order to satisfy generally accepted accounting principles. Materiality and relative client size proved to be the most significant factors regarding the overall evaluations of the contingency cases, although all the variables were significant. The major focus of the study--differences between individual and group-assisted risk evaluations--resulted in the materiality, communication channel, and authoritative status factors playing an interactive and significant role. Based on the results of this study, it appears that the accounting firm wishing to suppress risk in its evaluations should insist that advisory consultation be done by telephone and that face-to-face consultation carry with it decisive authority. Also, it appears that the use of groups leads to more consistency in audit judgments and should be considered in view of the lack of other determinable criteria.

Individual versus Group-Assisted Audit Evaluations--
An Empirical Study of Contingency Evaluations
within the Choice-Shift Framework

The area of accounting uncertainties seems to pose a significant problem for both accountants and auditors. Probably the most noteworthy recognition of the problems of reporting on uncertainties and attesting to such reporting appears in The Commission on Auditors' Responsibilities: Report, Conclusions, and Recommendations (CAR Report) (The Commission on Auditors' Responsibilities, 1978, Section 3). Generally, the report cites a number of lawsuits involving uncertainties which have resulted in successful plaintiff action against auditors and proposes that auditors be relieved of the responsibility of modifying their opinions when material uncertainties exist. The Auditing Standards Executive Committee (AudSEC) of the American Institute of Certified Public Accountants (AICPA) has generally adopted this position in a proposed Statement on Auditing Standard (SAS) entitled Auditor's Report--When There Are Contingencies (AICPA, 1977). Whatever the final disposition of these proposals, the dilemma presented by uncertainties does not disappear for either the accountant or the auditor who must decide on what constitutes "fair" disclosure of uncertainties.

Discussions with members of large accounting firms indicate that they at times use groups to make difficult reporting decisions. The rationale underlying such practice is the improvement of the quality of their decisions. Indeed, there is some evidence indicating that the quality of group judgments may be better than that of individual judgments (Einhorn, et al, 1977). Yet, little, if anything, is known about the effects of group decision making versus individual decision making in the auditing context.

There does, however, exist a considerable body of literature from the behavioral sciences (e.g., Meyers and Lamm, 1976, and Pruitt, 1971) which indicates that the risk present in a decision is likely to be significantly influenced by the use of either an individual or group decision process.

The major purpose of the study described in this paper is to present evidence with respect to this influence on the risk present in audit evaluations. Two other objectives include presenting evidence regarding: (1) the impact of a number of other situational variables on the risk present in audit evaluations and (2) the reduction of variation in the evaluations due to the individual versus group process. The other situational factors which appear to have both practical and theoretical import and which are examined empirically in this study include: materiality (somewhat low versus somewhat high); the authoritative nature of the decision (decisive versus advisory); the communication channel used for group interaction (telephone versus face-to-face); and the relative size of the client.

Need for the Study

At the initial Illinois Symposium of Auditing Research, Barrett and O'Malley (1975) provided the first recognition of the potential differences in risk levels present in audit decisions due to the individual versus group process. Financial Accounting Statement (FAS) No. 5: Accounting for Contingencies (Financial Accounting Standards Board (FASB), 1975b) had appeared in exposure form and met with considerable question regarding

the arbitrariness of its guidelines.¹ The Barrett and O'Malley paper dealt with FAS No. 5, but was exploratory and came to no statistical conclusions.

It did, however, in a general way, relate the theoretical findings associated with the choice shift phenomenon between individual and group decisions to the auditing problem. In addressing the choice shift issue, the study considered different sized groups and different levels of materiality. Although no resolution was adopted regarding group size, the study concluded that a contingency possessing "low materiality" tended to result in a risky shift from an individual decision to a group decision while a contingency possessing "high materiality" tended to result in a cautious shift from an individual to a group decision. Further review of the accounting literature indicated a number of other studies involving auditors' judgments (e.g., Aly and Duboff, 1971, Corless, 1972, Kinney and Ritts, 1973, Ashton, 1974, Boatsman and Robertson, 1974, and Joyce, 1976);

¹As with all FASB Statements, the amount to which the guidelines are to be applied must be material before application is required. Given materiality and the fact that a contingency is "reasonably estimable," then the type of required disclosure is dependent upon the probability of the contingency occurring. While the probability of any such contingency occurring has an underlying continuous scale of zero to 100, proper disclosure guidelines depend on three discrete verbal levels--remote, reasonably possible, and probable. For a material and reasonably estimable contingency which is deemed "remote," no disclosure is required. For a similar contingency which is deemed "reasonably possible," footnote disclosure is required. For a similar contingency which is deemed "probable," recognition in the accounts is required. FASB Interpretation No. 14: Reasonable Estimation of a Loss (FASB, 1976) effectively reduced the ambiguity of the amount of the contingency to be recognized in the accounts by requiring that a ranged estimate result in recognition of at least the lower bound. However, aside from the verbal descriptions included in FAS No. 5, little guidance exists to relate quantitative levels of probability to the three discrete verbal levels present in FAS No. 5.

however, none related to changes in the risk present in an audit decision concerning uncertainty and the individual versus group process.

Although the study reported in this paper uses FAS No. 5 as a vehicle for gaining more information about rather ambiguous guidelines concerning disclosure of contingencies, its findings also relate to the more general problems of uncertainty and the method (individual versus group) of decision making used in auditing contexts. Increasing ambiguity (uncertainty) appears to be a pressing issue about which the audit profession needs more knowledge. It appears commonplace to have the auditor mentioned in connection with such areas as: (1) financial forecasts; (2) quality of planning, control, and decision systems; (3) social performance reports; (4) management performance; and (5) some type of current valuation-based financial statements. One major accounting firm (Peat, Marwick, Mitchell & Co. (PMM & Co.), 1976, p. 36) feels that evaluation of uncertainties is one of four major divisions in which research may offer improvement in the final review, reporting, and summarization phase of accounting and auditing. As noted earlier, the CAR Report (CAR, 1978, Section 3) points to the area of uncertainties as an area of critical concern to auditors. The American Institute of Certified Public Accountants (AICPA) has acknowledged the difficulties of reporting uncertainties as represented by contingencies by conducting a special study and publishing the results as Financial Report Survey No. 10: Illustrations of Accounting for Contingencies (AICPA, 1976). The FASB also is cognizant of the problems of uncertainties as represented by contingencies. Particularly in evidence of its realization is the fact that of three studies it recently commissioned, two are to deal directly with FAS No. 5 (AICPA, 1977, p. 5).

The practical significance of this study rests on four assumptions. First, accounting firms do use, and will continue to use, groups to resolve difficult reporting problems encountered by auditors. Second, different types of group processes are used, or could be used, by different firms. Third, different levels of risk are present, or could be present, depending on the type of decision process used, whether the difference arises between individual and groups in general or between individual and different types of group processing. Fourth, the potential differences in expected values of benefits or costs are significantly affected by the decision process adopted. Unequivocal proof regarding these four assumptions is unavailable; however, considerable circumstantial evidence indicates the strong relevance of the study.

All of the persons in large accounting firms with whom the researchers spoke indicated that consultation on difficult reporting problems occurred frequently and was likely to continue. PMM & Co. (1976, p. 36) feels that more specialization lies ahead for the auditing profession. Such specialization may necessitate group decision processing as different specialists' knowledge and judgments must be combined for a "single opinion."

Discussion with knowledgeable persons in large accounting firms reveals a myriad of consultation techniques within and among firms. For example, in one firm, once appeal to a certain level is made for group consultation, the result of such consultation is final. That is, the consultants are in essence the decision makers. In another firm, the consultants remain consultants. That is, they propose, and the engagement partner (the auditor who is to sign the audit report) disposes. Of course, other combinations exist, but the

major point is that various combinations do exist while little seems to be known about the effects of such methods.

A considerable body of behavioral literature exists (for reviews, see Pruitt, 1971, and Myers and Lamm, 1976, and later portions of this paper) that indicates an expected difference in the risk adopted between an individual versus a group decision. Depending on a number of situational factors (e.g., the seriousness of the decision or society's expectations for the role filled by the decision maker(s)), the risk shift may be either in the risky direction or the cautious direction. Although later parts of the paper address these issues more fully, a cursory review of the behavioral literature indicates that many of the conditions surrounding the decision environment in an audit setting have been found to affect both the direction and the intensity of the choice shift in other settings. As noted earlier, the only evidence with respect to an audit setting appeared in the exploratory study by Barrett and O'Malley (1975). That study indicated a "high materiality" condition resulted in cautious shifts from individual to group decisions and a "low materiality" condition resulted in risky shifts.

Since it appears likely that different levels of the risk may exist for different decision processes, the issue is the determination of different expected values of decisions. Within the framework of the auditor's obligation to the public at large, to his client, and to himself, several factors demand attention in deciding to disclose a contingency or not. From one view s/he should insist on the disclosure of any information which s/he feels could result in a significant effect on the prudent user's decision model. Failure to do so could result in rather severe litigation costs. On the other hand, disclosure of all information may effect overload and

camouflage the important issues. Furthermore, insistence on imprudent disclosure may seriously jeopardize relations with the client, and impose unfair treatment to the current owners and managers of his client. Inordinately harsh positions regarding disclosure may culminate the auditor's real usefulness to society; for if s/he loses the client(s), then auditors with more flexible standards may usurp his/her position.

Thus, it appears that genuine differences in the expected values of outcomes arise when a difficult audit decision must be made regarding a somewhat ambiguous reporting guideline such as that reported on in this paper. More importantly, it is evident that too little is known about the effects of individual versus group decision making and the various conditions which influence the direction and intensity of any resulting choice shift between the two.

Theoretical Considerations

Several pertinent issues remain to be examined before accepting the relevance of the choice shift findings to the audit environment. First, does the social scientists' usage of the word "risk" coincide with the usage apparent in the audit decision? If one accepts the empirical findings as valid, are such findings supported by rational theoretical constructs?

The Concept of Risk. Risk by no means has a uniform definition for all social scientists. For example, for some it may be the first moment (arithmetic mean) of a distribution of possible--but uncertain--outcomes. This type of thinking results in a series of point estimates (expected values) for each decision alternative. Other social scientists (Tversky

and Pollatsek, 1969, pp. 2-5, Coombs and Huang, 1970, and Hoskins, 1975) agree that higher moments of the distribution of potential outcomes or some partial thereof may be appropriate (e.g., semivariance, variance, skewness, and kurtosis). In reviewing the choice shift literature, Pruitt (1971) indicates that a preponderance of choice shift researchers seem to deal with alternatives which have a better or lesser chance of occurring. That is, a "cautious shift" in these terms would be toward a decision for a course of action which would have a more narrow range of possible outcomes. A "risky shift," on the other hand, would be toward a decision for a course of action which would have a greater range of possible outcomes. Possible outcomes can be thought of as a series of potential rewards and/or punishments deriving from a given decision alternative. From this interpretation, it seems that the primary determinant of risk in choice shift research is the variance of the distribution of possible outcomes.

This concept of risk seems to be relevant to the dilemma posed in this study. Consider an auditor's decision concerning footnote disclosure of an uncertainty under the guidelines of FAS No. 5. Given that the contingency is material and reasonably estimable, then the decision reduces to determining the level of probability of occurrence at which to insist upon disclosure. That is, the auditor must determine the level of probability at which s/he feels the FASB meant for him/her to move from "remote" to "reasonably possible." Since the guidelines are subjective, s/he must consider the consequences (i.e., the possible outcomes) for insisting, or not insisting, on disclosure of the contingency. While there are many possible consequences which may obtain given the auditor's decision to insist, or not insist, on disclosure, the authors feel that two dominate his decision--the potential

loss of his client and the potential loss attributable to a successful plaintiff lawsuit.

These two are not so undimensional and trite as they may appear at first glance. Numerous intrinsic as well as extrinsic consequences demand consideration. Furthermore, during the course of the audit the auditor receives considerable feedback from the client before making the final decision to insist, or not insist, on disclosure. The feedback regarding lawsuits, however, comes well after the decision to not insist on disclosure. From a risk standpoint, the second course of action seems to result in a distribution of potential outcomes with much greater variance than the distribution associated with the first course of action.² Thus, there appears to exist a sound parallel between the connotation of risk embodied in the case at hand and its connotation in the choice shift literature.

Rationale Underlying the Choice Shift Phenomenon. Two general schools of thought provide the rationale for the choice shift phenomenon. The first of these--the diffusion of responsibility theory--asserts that people

²Some may argue that the Hochfelder ruling by the U.S. Supreme Court (Ernst & Ernst v. Hochfelder, 44 U.S.L.W. 4451 (U.S., March 30, 1976)) mitigated the diluge of cases and third party plaintiff successes against auditors. (For a concise assessment of Hochfelder, see Hampson (1976). For evidence of the volume of cases filed against auditors, see Liggio (1974, p. 100) and Liggio (1974, pp. 18-19). The authors' assert that the size of auditors' professional liability insurance premiums are good surrogates for the amounts involved as they are based largely on past occurrences and future expectations. In this regard, Jaenicke (1976, p. 2) asserts that "conservative estimates of annual insurance premiums now being paid by the 17 largest accounting firms are in the area of \$80,000,000".) At least one other case (Adams v. Standard Knitting Mills, Inc., et al., CCH Fed Sec. L. Rep., ¶95,683 (U.S.D.C., Eastern District of Tennessee, May 19, 1976, No. 8052) September 8, 1976) has already clouded the Hochfelder ruling and at least one expert in the area (Liggio, 1976) has cautioned that Hochfelder should not be interpreted as a panacea.

tend to shift part of the responsibility attributable to a decision to others in the group when passing from the individual decision mode to the group decision mode. This line of reasoning suggests that all group decisions reflect more risk than individual decisions. The second general notion underlying the choice shift phenomenon--the social value theory--contends that the direction of choice shifts is determined by dominant preferences within a society or culture. Since the diffusion theory is at a loss to explain cautious shifts, it has fallen out of favor with many social scientists (Pruitt, 1971, p. 341). On the other hand, social value theory has been more fully developed, both logically and empirically, in recent literature (Myers and Lamm, 1976). As a result, two versions of the social value theory--the social comparison version and the relevant arguments version--as well as some attempts at synthesis of the two dominate current thinking. Consequently, these three are explored in greater detail below.

The Social Comparison Version.³ The social comparison version of the social value theory contends that choice shifts represent reactions to normative social influences. As the individual moves to a group setting, s/he undergoes a social-emotional experience which manifests itself in his/her concern for both a favorable self-perception and self-presentation. In essence this version holds that shifts occur because the individual normally underestimates the posture of his/her associates. When s/he realizes that the social norm as represented by the group norm is underestimated, s/he

³The explanation of these two versions of the social value theory and attempts at their synthesis are necessarily brief. For a more complete literature review, see Pruitt (1971) and Myers and Lamm (1976). Specific findings relevant to difficult reporting problems faced by auditors are discussed in the "Method" section.

shifts his/her decision to re-establish him or herself on the socially desirable side of such behavior. Shifting under this version may also be attributable to the individual acting out a more extreme position after another group member exhorts a position more extreme than the individual's initial one. This version then holds that the shift results from social-emotional processes and ego preservation drives. Perhaps the most significant limitation of this version--especially where technical decisions are made via group processing--is the fact that it accords no significance to new information emerging during group discussion. Nevertheless, where such decisions tend to be quite subjective (as in this study and probably in most referred reporting decisions), the version seems germane. In addition, as a version of social value theory generally, it does not rule out cautious shifts as the diffusion theory does.

The Relevant Arguments Version. The relevant arguments version of the social value theory holds that choice shifts are exclusively attributable to individuals learning more about the decision issue from others in the group. This version is cognitively based as opposed to the socially-emotionally based comparison version. However, it too sees the group as a microcosm of society--hence, its position under the social value theory. This position is particularly evidenced by its contention that group discussion elicits a set of arguments which predominately favor the societally preferable alternative(s). Since the group's composite knowledge of issues and arguments is likely to be greater than that of any single individual member of the group, such knowledge is likely to cause each member to reassess his/her individual decision in light of prevailing social values. Such reassessment accounts for the shift. From a rational point of view, this version of the social value theory appears

to have more support than the social comparison version. Nevertheless, considerable empirical evidence and logical argumentation are supportive of the comparison version. Careful evaluation of the available research leads the writers to conclude that factors from both these versions are likely to impact on any choice shift.

An Effort at Synthesis. A number of factors in various experiments conducted to demonstrate the superiority of one version over the other have produced common outcomes with respect to the direction and nature of the choice shift. For example, it is empirically verifiable that group processing results in a polarization effect as opposed to a convergent effect. That is, the group treatment effects a stance clearly favoring one end of the distribution of individual decisions rather than one converging toward the mean of those decisions. The consequence or seriousness associated with the decision plays an important role in determining the direction and intensity of the shift. That is, as the potential outcomes become more serious, the shift direction becomes more likely to assume a cautious direction (Stoner, 1971). When the nature of the decision is fiduciary or moral, the direction of the shift also tends to be cautious.

--Insert Figure 1 About Here--

While much of the research in the late 1960's and early 1970's (e.g., Levinger and Schneider, 1969, and Bell and Jamieson, 1970) drew upon the comparison version for explanation of the empirical data, more recent research has been directed at establishing the relevant arguments version (e.g., Burnstein and Vinokur, 1972, Burnstein, et al., 1973, and Murnighan and Castore, 1975). Myers and Lamm (1976) feel that too much support exists for either version to be discounted. As a result, they propose a basic

attitude change model as developed by Kelman (1974) as an integrative vehicle (see Figure 1). The left most circle embodies the notions expressed by the comparison version, the lowest circle those by the relevant arguments version, and the right most circle the general evidence explaining the polarization effect due to the group treatment. Beginning with the left most first, they see it providing the motivation to participate in a favorable manner (right most circle). Obviously the individual's cognitive foundation (lowest circle) plays an instrumental role in determining whether s/he can commit him or herself to action and still contribute to a favorable ego experience (right most circle). The bias in the communication (right most circle) occurs to enhance the individual's ego as s/he presents him or herself as knowledgeable and confident. The actual communication elicits responses from other group members and augments the individual's cognitive foundation (lowest circle). This altered cognitive state then plays the major role (hence, the double arrow) in effecting attitude change which in turn accounts for the individual's choice shift. By using a double arrow from the lowest circle, Myers and Lamm recognize the persuasive nature of the relevant arguments research. At the same time, they acknowledge via a single arrow the existing social comparison research. The relative strengths noted in Figure 1 and in their discussion lays a rational basis for integrating the empirical findings.

Method

This section considers the experimental design, the subjects, the task, and the experimental variables. Throughout, the emphasis is on providing an adequate rationale for each of these areas from both theoretical and practical standpoints.

Experimental Design. Since only basic research has been accomplished regarding choice shifts between individual decision processing and group decision processing in the auditing context (Barrett and O'Malley, 1975), providing for the study of as many relevant variables as practicable was a major objective in selecting an experimental design. Also, inasmuch as little was known about the interaction effects of the selected variables in an auditing context and theoretical development led to the expectation of such effects, allowing for the detection of such interactions was a second major objective in the selection. With these objectives in mind, a multivariate factorial design was judged appropriate. The multivariate factorial design has a number of proponents in the scientific community (e.g., Winer, 1971, and Kirk, 1968) and has proven itself useful in choice shift research (Burnstein, Vinokur, and Trope 1973, and Murnighan and Castore, 1975). It followed that analysis of variance (ANOVA) was to be the principal statistical model, although analysis of covariance and correlation models were also available for some measures.

The actual design manipulated five independent variables ($2 \times 2 \times 2 \times 2 \times 3$), used repeated measures on two of these (discussed later), and controlled for several other variables (e.g., group size). Repeated measures became necessary in order to assure a sufficient number of observations per cell for statistical testing while limiting the number of subjects to a manageable level. For the same reasons and because of the paucity of knowledge regarding choice shifts in the auditing context, only two levels of each variable were used. The establishment of the levels is discussed individually for each variable later. A laboratory experiment was used because of the desire to control or manipulate as many variables as practical.

Subjects. All subjects in the experiment were college students. Three pilot studies were conducted at three different institutions in order to discover any problems in the instrument or its administration. The final experiment (the one reported in this paper) used 128 volunteer senior accountancy students nearing the completion of their second semester of auditing. All participants had studied the contents of FAS No. 5 during their curriculum, although the essential parts of FAS No. 5 were reviewed briefly for them in the questionnaire.⁴ This knowledge of FAS No. 5, coupled with the fact that the first auditing course dealt with reporting issues to a limited degree and the second course to a great degree, led the researchers to conclude that these students could adequately surrogate practitioners for this stage of the research--especially where decision processes (shifts) were the central focus.

Task. The 128 subjects were notified that they had been accepted to participate in the experiment and asked to report at various specified times. Unknown to them, they had already been randomly assigned to one of 32 four-person groups. Upon arrival, each subject was given \$5.00 and two contingency cases and asked to assess the probability (from a continuous scale) at which s/he felt footnote disclosure became necessary. In addition, for each case s/he was asked to assess (1) the probability at which others would require disclosure and (2) the probability which would represent the ideal level. These measures were to serve as predictors of any subsequent shift within the framework of the social comparison theory. Each case contained the

⁴FASB Interpretation No. 14 (FASB, 1976) was issued after these data were gathered and had no effect on the issue raised in this study either then or now.

warning that a decision to insist on disclosure resulted in a "high likelihood of client loss but largely eliminate[d] the possibility of future civil prosecution" with respect to this disclosure issue. Each case also warned that a decision not to disclose "increase[d] the likelihood of client retention but... [also]...increased risk of loss through litigation".

After completing these two cases, the subject was given a fresh questionnaire with the two identical cases and told to consider these cases with three other subjects who had already made individual evaluations on these same cases. The groups were told to come to a consensus evaluation. "Consensus" was defined for the subjects as "an evaluation that each of you can live with." Each subject marked his/her fresh questionnaire with the consensus evaluation and the group disbanded.

After completing these two cases, the subject was given a fresh questionnaire of the same cases and asked to indicate his/her individual judgment about the probability at which footnote disclosure would be required. After completion of this third questionnaire containing identical measures, each subject completed the debriefing questionnaire which consisted primarily of two brief personality inventories and some background data.

The Dependent Variable. The dependent variable was the probability level at which footnote disclosure of a reasonably estimable and material contingency should be disclosed in accordance with the provisions of FAS No. 5. Earlier discussion dealt with the rationale underlying this measure and will not be repeated. However, it might be helpful to recall that the higher the necessary probability to disclose, the greater the risk present in the decision. This situation exists primarily due to the rather ambiguous distribution of possible litigation outcomes. Also, it might be helpful to recall that the probability scale was continuous from zero to 100.

Independent Variables. Independent variables are those variables which are believed to be relevant in determining the dependent variables and are manipulated within the framework of the factorial design so that they may be analyzed via ANOVA. Five separate independent variables were studied in this experiment: (1) materiality (somewhat low versus somewhat high); (2) the relative importance of the audit client to the office of the accounting firm (somewhat unimportant versus somewhat important); (3) the authoritative nature of the individual or group (advisory versus decisive); (4) the communication channel used for group interchange (telephone versus face-to-face); and (5) the number of persons in the evaluation role (basically, individual versus group). Subsequent discussion addresses the relevance of these variables to both the audit environment and to the existing choice shift theory and research. In addition, it explains the determination of the levels at which they were set for the experiment.

Materiality. The concept of materiality occupies an important position in both the auditing and choice-shift literatures. With respect to auditing, the auditor is relieved of responsibility for reporting any immaterial amounts (AICPA, 1973, ¶430.02). From an accounting perspective, generally accepted accounting principles as set forth in FASB pronouncements are not intended to apply to immaterial amounts (FASB, 1973, p. 6). As noted earlier, the consequence or seriousness of the possible outcomes of a decision has been shown to affect the direction and intensity of the choice shift (Stoner, 1971). That is, the more serious the possible outcomes, the more cautious the shift tends to be. Certainly it seems logical that the relative degree of materiality should be one component of a "seriousness" dimension for

any difficult reporting decision. Several issues had to be resolved, however, before establishing the materiality variable. First, should one or more dimensions (e.g., percentage of net income or percentage of book value) be used to surrogate materiality for the subjects? Second, what were the appropriate levels to be used for the dimension(s)?

A partial answer to the first question was provided by reviewing the overall purpose of this study--namely to explore the effect of as many variables as practical on decisions under uncertainty--not merely to study various dimensions of materiality and levels thereof. Thus, the decision reduced to determining what single dimension to use in order to execute the study efficiently. In the only other choice-shift research in the auditing environment, Barrett and O'Malley (1975) used various percentages of book value to accomplish this manipulation. Indeed, there exists some accounting and general scientific research (Dickhaut and Eggleton, 1975, p. 62) indicating that relatively fixed percentages play an important role in many persons' detection of essential differences. Ward (1976) notes the existence of a number of articles exhorting the percentage of operating income as the relevant basis. While no single dimension is idealistic, it does seem that the percentage of net income dimension is the one which has received perhaps the greatest amount of attention (e.g., FASB, 1975a). The researchers decided that this dimension would be recognizable and useful from a decision standpoint to the subjects and to auditors generally. Thus, it was adopted.

Establishing two appropriate levels of percentage of net income was extremely germane to both the external validity and the experimental success of the study. That is, the two levels should be of sufficient amounts to qualify as likely for group referral in an audit setting and at the same

time be sufficiently different to study the effect of materiality on the dependent variable. Ward (1976) points out that the suggested range of percentages of operating income necessary to establish materiality are generally five to fifteen percent. Boatsman and Robertson (1974) indicate four percent of net income as the most likely threshold between immateriality and materiality. Dickhaut and Eggleton (1975, pp. 45,53) found the modal choice of their subjects in determining essential differences to lie in the ten to twelve percent range. In their choice shift study, Barrett and O'Malley (1975) found that subjects elected to disclose very material amounts (thirty percent of book value) at extremely low probabilities of occurrence. Thus, little potential wisdom or relevance seemed in the offing should materiality be set very high. That is, given that very serious situations (high materiality) tend to elicit cautious shifts (decreased probability), little change would be available from individual to group decisions. With these considerations in mind, the researchers decided to set the "somewhat low" materiality condition at five to seven percent of net income and the "somewhat high" materiality condition at ten to twelve percent.

The Relative Importance of the Audit Client. The relative importance of the audit client appears to be pertinent from both an auditing and a choice-shift standpoint. In an auditing context, the relative amount of fees derived from one client is often connected to a potential problem of independence from the client. In fact, a recent study by the Accountants International Study Group (AICPA, 1977, p. 2) indicates this very issue represents a consensus concern in determining independence for the countries considered. The concept of independence is so pervasive to the whole notion of auditing that it is generally held to be the foundation of the profession (Carey and Doherty,



1966). The significance of the relative importance of the client to choice-shift theory is also clear. As discussed earlier, a considerable difference in consequence exists between the prospect of losing an important client versus one which is relatively unimportant. As the relative importance of the client increases, the choice-shift literature indicates an increased expectation for a cautious shift (Stoner, 1971). (In this instance, a "cautious shift" would be in the direction of client benefit, which would be expected to result in the need for a higher probability of occurrence before insisting on disclosure. Hence, in relating this shift to the risk measurement scale utilized in this study, this shift would be termed a risky shift.) Since this issue seems pertinent in both the auditing and choice shift contexts, the major concern reduced to how to operationalize the concept properly.

A major consideration from an external validity standpoint was to determine some realistic percentages of office revenues that would coincide with the verbal descriptions "somewhat unimportant" and "important." Discussions with practitioners indicated that the engagement partner normally viewed all his clients as at least "somewhat important." Furthermore, these discussions revealed that a client who constituted ten percent of the office's revenues was clearly "important." The top figure of ten percent seemed to parallel the materiality quantification and appeared acceptable in light of Dickhaut and Eggleton's research (1975) cited earlier. Equating "important" to ten percent of office revenues is not intended to indicate that a smaller percentage is unimportant. It simply acknowledges three facts. First, no specific empirical guidance was available in the auditing literature. Second, the researchers wanted assurance of a clear cut differentiation between the

high and low percentage figures for this variable in order to detect an effect if in fact it existed. And finally, setting the top amount at greater than ten percent appeared to be too unrealistic. The lower level of one percent of revenues was set even more arbitrarily--but with the first and second of the above reasons firmly in mind.

The final decision with respect to this variable related to experimental efficiency. Previous discussion indicated the need to study as many variables as practical due to consideration for the interaction effects, the contextual validity and the relative paucity of knowledge. One method to increase the efficiency of a design is to use a repeated measure. That is, each subject receives each level of a given independent variable on which to make decisions. In this instance, the researchers decided that the relative importance of the client would be an appropriate independent variable on which to use a repeated measure. One reason for this decision was the fact that a repeated measure is normally a more obviously manipulated variable as far as the subject is concerned. Also, due to the lack of empirical knowledge regarding this variable and in an auditing context, the researchers felt that it--more than any other variable except for the number of persons in the evaluator role--should be repeated. Thus, in one of the two cases each subject received, s/he was a member of a fairly small firm who had to make a disclosure decision regarding an important client. In the other case, s/he was a member of a large firm and had to make the decision regarding a somewhat unimportant client. The order of presentation (large-small or small-large) was balanced to mitigate any order effects that may have been present.

The Authoritative Nature of the Individual or Group. Some public accounting firms treat responses to referred problems as decisive in nature while

other firms treat such responses as advisory in nature. Findings from prior research (Myers and Lamm, 1976 and Pruitt, 1971) indicate that advisory evaluations tend to be more risky than decisive evaluations. The principal explanation for this occurrence seems to be the perception that an advisor incurs less responsibility for the ultimate resolution than a decision maker. When adapting this research to the auditing environment, some peculiarities arise. First, the "textbook approach" in accounting and auditing virtually always advocates conservatism in resolving disclosure issues. Hence, it may be correct to anticipate an advisor acting in a more cautious manner than a decision maker who must bear a greater measure of responsibility to his/her firm should the client be lost because of a too cautious approach. Since firms do differ in their approaches and since the variable has proven important in previous research, it seems worthy of inclusion in this study. Its influence is expected to be directional--with the advisory level fostering a greater cautious shift should it prevail or mitigating a risky shift should it develop.

All subjects were cast into the advisory or decisive role for the entire experiment since changing them from one role to the other may well have caused serious validity problems. With respect to this variable, students rather than practitioners may represent better subjects for the experiment because they would not have been preconditioned by an existing referral firm or office policy.

The Communication Channel Used for Group Interchange. Since both the telephone conference call and face-to-face exchanges seem to be common vehicles for referral discussions for public accounting firms, the attractiveness of using this as an independent variable was evident. This attractiveness is

accentuated in view of findings from prior studies (Lamm, 1967, Bell and Jamieson, 1970, and Myers and Lamm, 1976), which commonly indicate that the more open the communication channel, the greater the shift between individual and group decisions. In this experiment, it is expected that subjects who interact in a face-to-face format will exhibit greater shifts than those subjects who interact in a telephone conference call format. The basic behavioral argument underlying this effect seems to be that more open channels allow for information to be transmitted and received by group members regarding the referral problem. This explanation "fits" under either the social comparison or relevant arguments version of the social value theory. As with the preceding variable, subjects interacted by either telephone conference call or face-to-face meetings but not both.

The Number of Persons in the Evaluation Role. In this study, attention focuses on "individual" and "group" evaluations. Pertinent rationale is evident from previous discussion and will not be reiterated. However, the terms "individual" and "group" need clarification. Under the "Task" caption, it was explained that each subject made an initial evaluation on each of two cases, then s/he moved into a group where a consensus evaluation was made on the identical cases. Finally s/he again made an individual evaluation on the same cases. To simplify discussion, these evaluations will be referred to, respectively, as "pre individual evaluation" (or simply "pre evaluation"), "group evaluation" and "post individual evaluation" (or simply "post evaluation"). Many prior studies (e.g., Lamm, 1967, Burnstein, Vinokur and Trope, 1973, and Murnighan and Castore, 1975) have used the group evaluation as a treatment and consequently not introduced the actual group evaluation into the data

analysis. This approach results in pre individual evaluation being the individual measure and post individual evaluation being the group measure. This approach seems wasteful of information as all three levels of the evaluation (pre, group, and post) are available. Nevertheless, where there are no significant differences noted between the approaches of handling this variable either at two levels or three levels, the two level approach (pre and post evaluations) will be used. Where significant differences between the two approaches do develop, the three level approach will be clearly set forth. This policy seems to provide more consistency with the majority of prior studies while simultaneously utilizing the data to the greatest extent.

In an auditing environment, one would expect a generally cautious shift to be evidenced on the overall evaluations. As noted earlier, this expectation is noted in the social value theory which holds that persons (such as auditors) in fiduciary capacities in our society are expected to act cautiously on behalf of others. Thus, the dynamics of group interaction are likely to have an overall cautious impact on evaluations.

Controlled Variables. Group size and certain personal characteristics were controlled because of findings or suggestions from previous studies. Group size was held constant at four because the larger the group size generally the larger the shift (Pruitt, 1971). Such occurrences are easily explainable under either version of the social value theory. Under the relevant arguments versions, the larger the group size, the greater the likelihood of additional information available for group evaluations. Under the social comparison version, the larger the group size, the greater

the likelihood an individual will have to shift more to retain his/her perceived polar relationship to the group. Also of some consideration in arriving at four members per group was the external validity consideration for consultation groups in public accounting. It appeared unusual for such a group in public accounting to exceed four. Yet, if the effects of grouping were significant, it seemed prudent to be able to present a large enough group to detect such.

Two classes of personal characteristics were controlled--status and personality traits. Under status, the students were virtually peer pure in terms of formal or legitimate power as all were undergraduates with virtually identical academic curricula. However, status along the intelligence/expertise dimension was controlled ex ante only by random assignment between groups. As a measure for potential statistical control, each subject gave his/her grade point average to surrogate this dimension. Finally, two personality scales were administered during the debriefing phase of the experiment. These two scales--The Crowne-Marlowe Social Desirability Scale (Crowne and Marlowe, 1967) and the Barron Independence of Judgment Scale (Barron, 1968)--were employed to allow for ex post statistical control should analysis indicate a significant non random effect on shifting behavior attributable to such personal idiosyncrasies.

Results

Following the application of Bartlett's test for heterogeneity of variance, which indicated the data were satisfactory for ANOVA, and examination of the influence of personal characteristics by correlation and collapsed

scale ANOVA which generally proved insignificant,⁵ attention focused on analyzing the main effects of the ANOVA designs and, in particular, interactions with the shift variable. Several items are noteworthy before discussing the following analyses. First, as indicated earlier, two major ANOVAs were performed--one with the shift variable at two levels (pre and post evaluations) and one with the shift variable at three levels (pre, group, and post evaluations). Where significant differences arose between the two, they are noted. Second, the main effects represent associations between the levels of the independent variables and the evaluations on the cases. While these main effects are interesting, they do not represent the major thrust of the study. Instead, analysis of the interactions with the shift factor constitutes the major interest of this inquiry.

Insert Table 1 about here.

Analysis of Main Effects. The data in Table 1 indicate the effect of each of the five independent variables on the evaluations made regarding the probability at which disclosure must be made in each of the two cases. The main effects reflect influence over both the "individual" and "group" evaluations. The largest differences were induced by the manipulations of materiality and the relative size of the client, although all the main effects proved important.

⁵Under certain ANOVA combinations, collapsed measures (tertile scores) from both the Barron and Crowne-Marlowe scales proved significant with respect to evaluations of the cases. However, these effects were insignificant in the framework of the analysis of covariance. This fact coupled with the fact that under no circumstances was the shift between pre, group, and/or post evaluation significantly related to these measures led the researchers to give them no further consideration. Grade point average was not significant under any circumstances. For further discussion, see Reckers, 1978.

Materiality. The high materiality situation (approximately 11% of operating income) contrasted with the low materiality situation (approximately six per cent of operating income) results in a dramatic difference (15.2%) of opinion among the subjects and is highly significant ($p = .00$). That is, the level of probability on average at which the contingency became "reasonably possible" for all evaluations of high materiality cases was 34.8%--a somewhat cautious position. By contrast, the same figure for all low materiality cases was 50.0%--a more risky position. This outcome is as expected and in agreement with the findings cited earlier. Also, the approach evidenced by the data is consistent with much of the traditional accounting and auditing literature (AICPA, 1970, and SEC Regulation S-X, Rule 1-02) which suggests that disclosure of an item becomes necessary if statements would otherwise be misleading. However, this approach does not portray the guidelines of FAS No. 5. That is, if an issue is indeed material, then the level of probability necessary to reach the plateau of "reasonably possible" should be the same for any material item--no matter how material. Inspection of the data indicates that the subjects used some variant of an expected value decision model. That is, some combination of the materiality of the contingency and the necessary probability of its occurring was the driving force behind their evaluations.

Also of some consequence in these data are the relatively high levels of probability necessary to constitute "reasonably possible". The subjects were given the definitions of "remote", "reasonably possible", and "probable" from FAS No. 5 in their case materials⁶ and asked to indicate the probability

⁶The definitions from FAS No. 5 are:

- Remote. The chance of the future event or events occurring is slight.
- Reasonably possible. The chance of the future event or events occurring is more than remote but less than likely.
- Probable. The future event or events are likely to occur.

of occurrence at which they must insist on disclosure of the contingency. Thus, by elimination, the argument can be made that if the likelihood of the contingency occurring is neither probable nor reasonably possible then it must be remote. Reviewing the data leads to the conclusion that even for a contingency of approximately 11% of operating income, any probability of occurrence less than 34.8% would constitute remote. It seems that a chance of occurring of one in three hardly meets a normal interpretation of "slight" or "remote." The low materiality subjects' responses indicate anything less than 50% constitutes a remote or slight chance of occurrence.⁷ Such interpretations could seemingly lead to serious problems in some audit circumstances.

Relative Size of the Client. The data in Table 1 clearly indicate a difference (13.0%, $p = .00$) in requirements between insisting on disclosure between relatively large versus relatively small clients. As predicted, the subjects (all had one large and one small client case) clearly adopted a more risky position with respect to the large client (insist on disclosure at 48.5%) than the small client (insist on disclosure at 34.5%). These results indicate that the subjects of this experiment (seniors in accountancy) reacted to "independence" pressure from larger clients. The results may tentatively indicate the need for relatively large public accounting firms if a more cautious disclosure policy is desired by society.

The Authoritative Nature of the Subject or Groups. As suspected, the subjects evaluating the cases in an advisory capacity tended to render "textbook" advice. As a result, they advocated a somewhat more cautious approach than

⁷Comparable results have been obtained with practitioners as respondents to a mail survey of similar cases. (Reckers and Stagliano, 1978).

those subjects evaluating in a decisive capacity (39.9% versus 44.9%, $p = .04$). It is important to realize that these findings do not necessarily indicate that the final decision of the person receiving the advisory evaluations would in fact be more cautious than that evaluation imposed by the decisive group. However, the analysis does indicate a trend that groups evaluating a problem in an advisory capacity may tend to be more cautious than groups evaluating a problem in a decisive mode.

The Communication Channel Used for Group Interchange. The data in Table 1 indicate that this variable bordered on having a significant effect on evaluations. In interpreting these data, one must consider the fact that all other variables are confounded in their effect on the means of the evaluations. This point is particularly germane in this instance as the pre and post evaluations are confounded in the means presented and certainly the pre evaluation should not be affected by the communication channel used for group interchange as the subjects were not even aware of such at the time of making their pre individual evaluations. For this reason, two separate analyses were performed on this variable--one with pre evaluations only and one with post evaluations only. The communication channel had no significant effect on the pre evaluations which tends to indicate somewhat that randomization of subjects among groups was effective. The analysis using the post evaluations did reflect a significant effect on evaluations attributable to communication channels. The face-to-face interchange resulted in a more cautious posture generally although one should temper any conclusions at this stage as subsequent discussion of interactions provides greater lucidity regarding this matter.

The Number of Persons in the Evaluation Role. To reiterate--the data in Table 1 are based solely on pre individual and post individual evaluations. The main effect of this variable (the shift effect) did prove to be significant at a probability of .07 in the risky direction. However, this condition was not the same with respect to group decisions ($\bar{X} = 40.4$) as their overall shifts resulted in an insignificant cautious shift. The data in Table 1 should not be taken as the true significance of the shift effect due to the confounding of competing forces from other independent variables. These competing forces can only be adequately analyzed by addressing their significant interactions with the shift variable as explained below.

Analysis of Interactions with the Shift Factor. All interactions with the shift factor are presented in Table 2. As noted just above, the confounding of the independent variables' effects on evaluations results in limited confidence when assessing the actual impact of each independent variable in the context of the whole experimental framework. In order to appreciate the richness of the experimental design sans confounding, detailed analysis of the highest order interaction which is significant should be undertaken (Kirk, 1968, pp. 179-182). Before moving to analysis of the interaction between materiality, authoritative capacity, communication channel, and choice shift (the A x C x D x E factor in Table 2), brief consideration of the first order interactions may be interesting.

Clearly the most important factor in determining the direction and magnitude of the shift was materiality (A x E in Table 2). High materiality loss contingency cases resulted in an average cautious shift of 6.6% (from a pre individual mean of 36.6% to a post individual mean of 30.0%). Analysis of simple effects (Kirk, 1968, pp. 179-182) and application of the

Newman-Keuls test (Kirk, 1968, pp. 91-93) indicated this shift to be significant at .05. Low materiality loss contingency cases resulted in an average risky shift of 4.7% (from a pre individual mean of 46.1% to a post individual mean of 50.8%). Although this shift was not significant at traditional levels, the total shift effect due to materiality 11.3% (6.6% plus 4.7%) indicates the import of materiality. When compared to materiality, the other first order shift interactions were not nearly so important and were statistically insignificant. Although they did indicate the predicted influence on shifts with the exception of the communication channel which did not have a predicted direction but merely an intensification role in the theoretical framework.

The data in Table 2 indicate that the B x C x E and the C x D x E interactions meet the traditional levels of significance (.07 and .00, respectively); however, the proper analytical route, as noted earlier, is to consider the highest order interaction in greater detail. In bypassing these two interactions, it should be noted that the B factor, relative size of the client, had a very small effect. Also, the entire C x D x E interaction data are encompassed in the more complex A x C x D x E interaction. In order to fulfill the commitment to divulge significant differences between analyses with the shift factor at two levels and at three levels, the data in Table 3 reflect an analysis of the A x C x D x E interaction with the shift factor at the pre, group, and post evaluation levels.

Insert Table 3 about here.

The data in Table 2 indicate that the greatest influence on shifting behavior came from factor A, materiality, and the interaction of factors C and D, authoritative capacity and communication channel, respectively.

Table 3 reemphasizes the importance of factor A as cautious shifts are detected under each of the high materiality conditions whereas risky shifts prevail in each low materiality case. The C x D interaction mitigated or intensified the magnitude of this directional shifting effect. The data in Table 3 indicate that:

- (1) the Advisory-Telephone manipulation intensified the caution reflected by the subjects in shifting their evaluations. In cell 1, the high materiality effect was boosted to statistical significance; in cell 5, the low materiality effect (orientation toward greater risk taking) was mitigated. Due to this suppression, risky shifts in cell 5 are statistically insignificant.
- (2) the Advisory-Face-to-Face manipulation intensified the risk reflected by the subjects in shifting their evaluation. Cells 2 and 6 are relevant to this observation. In cell 6 the low materiality orientation toward greater risk was magnified to the level of statistical significance. In cell 2, group pressures per Social Value Theory and especially the Social Comparison Version, forced a consensus evaluation reflective of fiduciary conservatism and a cautious shift, yet when disbandment of the group occurred, individuals reverted to evaluation postures not significantly more cautious than their initial evaluations.
- (3) the Decisive-Telephone manipulation intensified the the risk reflected by the subjects in shifting their

evaluations. Cells 3 and 7 are relevant to this observation. Low materiality risky shifts were amplified by the factor combination of cell 7 and the cautious shifts associated with high materiality conditions were suppressed in cell 3.

- (4) the Decisive-Face-to-Face manipulation intensified the caution reflected by the subjects in shifting their evaluations. Cells 4 and 8 are relevant to this observation. The results in those cells indicate increased caution although this influence is relatively weak--particularly in cell 4, where significant cautious shifts are restricted to the shift between pre and group evaluations only.

These results imply that a firm may have some influence over its risk posture when setting group consultation policy. If the firm seeks to suppress risk, it may insist that advisory consultation be by telephone whereas face-to-face consultation carry with it decisive authority and recognized responsibility. Also, in view of the fact that group-consensus decisions in each cell are more caution oriented than the average of post-discussion individual responses, and for this reason, group decisions might be encouraged.

Evaluation Variability. Within the context of audit decision making and human information processing, Joyce (1976) discusses the use of consensus as a criterion against which to measure the subjective "correctness" of the human judges' decisions. The concept is similar to the consensus concept

discussed in an accounting context by Ijiri and Jaedicke (1966) and developed further by Ashton (1977). Joyce's discussion more closely parallels the situational setting in this experiment so the importance of the consensus concept is drawn primarily from his work.

Hicks (1974, p. 36), a leader in the organized auditing profession wrote: "In the best of all possible worlds, every auditor, given the same set of facts, would select the same auditing procedures and apply them to the same extent." This statement is directly germane to any human judgment situation when one attempts to compare the judges' evaluations of dilemmas and the actual environmental outcomes of the dilemmas. Within the framework of this experiment, as with many audit evaluations, there exists no explicit, physically definable criterion against which to evaluate the propriety of the subjects' judgments. This consensus notion is present to an extent in judicial philosophy as well. For example, a passage from the BarChris⁸ proceedings holds that: "Accountants should not be held to a standard higher than that recognized in their profession."

Yet when a standard or evaluation rule is ambiguous, which often seems to be the case, expert witnesses testify as to the propriety of the evaluation actually made. To the extent that the fellow evaluators agree with the action taken, it appears that the auditor-defendant has a better chance of successfully defending his evaluation.

Insert Table 4 about here.

⁸Escott v. BarChris Construction Corp., 283 F. Supp. 643 (S.D.N.Y. 1968).

It appears that the expected costs of defending an inconsistent evaluation ex post may well exceed the cost of preventing an inconsistent evaluation ex ante. Thus, one key potential benefit of utilizing groups in the process of evaluating relatively ambiguous cases, may be the reduction of inconsistency and the imposition of a type of consensus. Table 4 presents data relevant to this determination.

In order to preserve the experimental richness of the design, Table 4 presents the means, variances, and differences in variance on a per cell basis. A perusal of the table indicates that in 15 of the 16 cells, a variance reduction occurred. When tested for statistical significance using either the Runs test or the Wilcoxon Sign test (Siegel, 1955), this occurrence is significant at the .01 level. Thus, it appears that group discussion is very likely to result in the reduction of variation in subjects' evaluations. In view of this evidence, the use of groups appears to be well-advised when the consequences of the eventual evaluation may be serious for the auditor or his/her firm. This conclusion is particularly appropriate in view of the findings already discussed which reveal that a large client results in an initially more risky posture and that high materiality militates for a cautious shift.

Summary and Conclusions

The major purpose of this study was to present evidence relevant to individual versus group processing effects on the resolution of audit dilemmas. In addition, the study addressed the effects of a number of other variables potentially relevant to the evaluators. Another subsidiary objective was to study the variance between resolutions made solely on an individual basis

versus resolutions made with the benefit of group discussion. The need for the study was justified on three bases. First, the area of uncertainties presents significant problems for auditors and as such deserves more study. Second, group consultation is commonplace in the current audit environment and is likely to increase. Finally, there is a substantial body of behavioral literature which suggests that there exist significant differences in risk postures and consistencies between individual and group-assisted evaluations. Much of the initial portion of the paper was directed at supporting these issues. Perhaps the most noteworthy contribution in this portion was the synthesizing of the behavioral research to date on the choice-shift phenomenon and relating it to the audit environment. Also in this section, a number of variables which are common to audit dilemmas were discussed and eventually controlled or manipulated within the framework of the experimental design.

The subjects in this experiment were students who assumed the role of independent auditors. Their task was to evaluate that level of probability of occurrence of a loss contingency at which disclosure is essential for conformity with generally accepted accounting principles. The materiality of the loss contingency exerted a dominant influence in establishing the point at which the subjects insisted on disclosure--with a high materiality condition resulting in a lower probability level. By selecting a lower probability level, the subjects opted for less risk. Individual consideration of the other independent variables resulted in a higher required probability threshold before insisting on disclosure when: (1) the client generated a large as opposed to a small fee; (2) the subjects were in a decisive as compared with an advisory evaluation role; and (3) the subjects interacted by telephone rather than face-to-face.

Examination of these variables' effects on shifting phenomenon indicated that all were in the predicted direction (except for the communication channel treatment which had no predicted direction). The most comprehensive analysis of the data indicated that materiality proved to be dominant in explaining the shifting behavior among pre individual, group, and post individual evaluations. The high materiality condition fostered cautious shifting behavior and the low materiality condition yielded risky shifting behavior. The communication channel and the authoritative nature of the evaluator exerted intensifying or moderating influences on this shifting behavior. The advisory/telephone condition and its opposite, the decisive/face-to-face condition exerted a cautious influence on shifting behavior. Conversely, the advisory/face-to-face condition and the decisive/face-to-face condition exerted a risky influence on shifting behavior.

A final issue of considerable practical import is the fact that group facilitated evaluations exhibited significantly less variation than did evaluations made without the benefit of group interaction.

Several non obvious insights seem in order at this juncture. First, and somewhat disturbing, is the overall level at which the subjects defined the lower threshold of "reasonably possible." An overall assessment of slightly greater than 40% probability may exceed a reasonably prudent man's definition of the boundary between a remote chance of occurrence and a reasonable probability of occurrence. Another related issue involves the use of a variant of an expected value decision model by the subjects in interpreting FAS No. 5. The language in this professional standard clearly calls for a sequential decision model. That is, one decision should be

made regarding the materiality and estimability of the contingency and then a separate decision should be made regarding the probability of occurrence. A third point raises questions relevant to the independence of the auditor-client relationship. The subjects' evaluations clearly indicated that a relatively large fee client would receive more "favorable" treatment on disclosure issues than a relatively small fee client. This result suggests that firms should consider exercising additional safeguards in making disclosure decisions with respect to large clients. It may also suggest a greater ability for large accounting firms to withstand the apparent temptation to render favorable treatment to relatively large audit clients.

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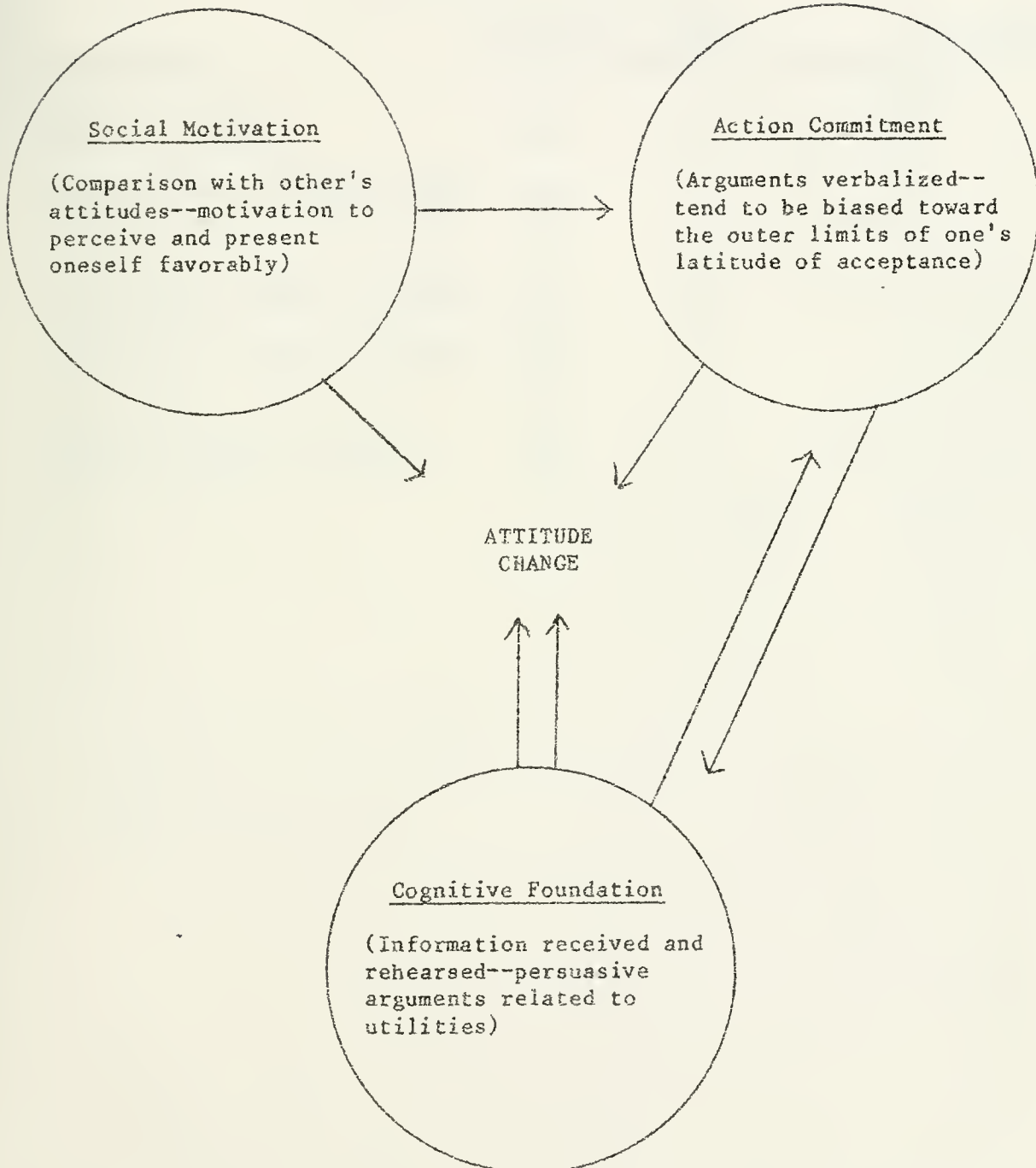
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Figure 1

A Configurational Synthesis of Existing
Choice-Shift Research



Note: Adopted from Myers and Lamm (1976, p. 619).

Table 1

Main Effects on Case Evaluations

<u>Variable-Level</u>	<u>Evaluation Means</u>	<u>Mean Differences</u>	<u>F Score</u>	<u>Significance Probability</u>
Materiality--High	34.8			
Materiality--Low	50.0	15.2	41.04	.00
Relative Size of Client--Large	48.5			
Relative Size of Client--Small	35.5	13.0	28.48	.00
Authoritative Capacity--Advisory	39.9			
Authoritative Capacity--Decisive	44.9	-5.0	4.32	.04
Communication Channel--Telephone	44.4			
Communication Channel--Face	40.4	4.0	2.74	.10
Number of Persons--"Individual"	41.4			
Number of Persons--"Group"	43.5	-2.1	3.44	.07

Table 2

Interaction Effects Including the
Shift Factor (E) on Evaluations

<u>Factor</u>	<u>F Score</u>	<u>Significance Probability</u>
A x E	25.14	.00
B x E	.68	.41
C x E	1.12	.29
D x E	.22	.64
A x B x E	1.98	.16
A x C x E	.58	.81
A x D x E	.01	.91
B x C x E	3.35	.07
B x D x E	1.38	.24
C x D x E	15.50	.00
A x B x C x E	.05	.81
A x B x D x E	.00	.96
B x C x D x E	1.10	.30
A x C x D x E	7.71	.01
A x B x C x D x E	.15	.70

Legend

- A = Materiality of Loss Contingency
- B = Relative Size of Client
- C = Authoritative Capacity of the Evaluation
- D = Communication Channel
- E = Number of Persons

Table 3

A x C x D x E Interaction with Factor E at the

Pre, Group, and Post Evaluation Levels

	Advisory		Telephone		Decisive	
	Telephone	Face-to-Face	Face-to-Face	Telephone	Face-to-Face	Face-to-Face
High Materiality	1	Pre Group Post 38.5---29.2---32.6 └──────────┘	2	3	4	
			Pre Group Post 31.3---24.3 27.2	Pre Group Post 40.5 36.1 40.1	Pre Group Post 36.2---30.2 32.4	
Low Materiality	5	Pre Group Post 43.7 41.2 43.6	6	7	8	
			Pre Group Post 44.6---53.3---58.2 └──────────┘	Pre Group Post 49.6---62.5---66.4 └──────────┘	Pre Group Post 46.7 46.2 47.3	

---Significant at .05

----Significant at .10

Note: For legend relating to A, C, and D see Table 2.

Table 4

Means (\bar{X}), Variances (s^2), and Variance Differences by Cell
for Pre and Post Evaluations

		High Materiality				Low Materiality			
		Large Client		Small Client		Large Client		Small Client	
		1	2	3	4	5	6	7	8
Face- to Face	Advisory	Pre 45.81 \bar{X}	Post 43.44 \bar{X}	Pre 41.56 \bar{X}	Post 44.06 \bar{X}	Pre 34.75 \bar{X}	Post 30.25 \bar{X}	Pre 26.43 \bar{X}	Post 26.43 \bar{X}
		s^2 182.5	s^2 767.3	s^2 752.4	s^2 14.9	s^2 553.7	s^2 227.1	s^2 286.3	s^2 140.2
		-275.9				-326.6		-146.1	
	Decisive	Pre 53.56 \bar{X}	Post 75.00 \bar{X}	Pre 45.75 \bar{X}	Post 57.81 \bar{X}	Pre 41.75 \bar{X}	Post 39.50 \bar{X}	Pre 30.63 \bar{X}	Post 25.31 \bar{X}
		s^2 436.8	s^2 163.3	s^2 544.3	s^2 -381.0	s^2 563.6	s^2 308.0	s^2 468.7	s^2 348.2
		-0.4				-255.6		-120.5	
Tele- phone	Advisory	Pre 48.94 \bar{X}	Post 65.50 \bar{X}	Pre 47.07 \bar{X}	Post 46.07 \bar{X}	Pre 44.33 \bar{X}	Post 31.67 \bar{X}	Pre 35.00 \bar{X}	Post 33.13 \bar{X}
		s^2 588.1	s^2 196.8	s^2 518.5	s^2 -321.7	s^2 570.7	s^2 102.4	s^2 506.7	s^2 346.3
		-130.1				-468.3		-160.4	
	Decisive	Pre 58.31 \bar{X}	Post 63.00 \bar{X}	Pre 34.50 \bar{X}	Post 31.00 \bar{X}	Pre 52.90 \bar{X}	Post 51.75 \bar{X}	Pre 27.94 \bar{X}	Post 27.81 \bar{X}
		s^2 539.2	s^2 43.40	s^2 439.3	s^2 -395.9	s^2 770.1	s^2 550.8	s^2 296.2	s^2 276.6
		-242.3				-219.3		-19.6	



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