A MEDICAL ATTRIBUTION OF RESPONSIBILITY SCALE: EFFECTS OF OUTCOME, ACTOR, JUDGMENT CONTEXT, LOCUS OF CONTROL AND OTHER PERSONALITY MEASURES

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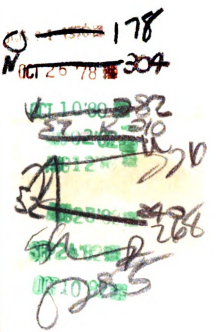

ABSTRACT

A MEDICAL ATTRIBUTION OF RESPONSIBILITY SCALE: EFFECTS OF OUTCOME, ACTOR, JUDGMENT CONTEXT, LOCUS OF CONTROL AND OTHER PERSONALITY MEASURES

By

Gregory Thomas Loftus

This research examined the patterns of attribution of responsibility by medical school faculty and students to persons acting in a context of medical care and education. An instrument was developed called the Medical Attribution of Responsibility Scale (MARS) which systematically varied the Quality of outcome, Good-Bad; the Intensity of outcome, Mild-Severe; and, the degree of Association between actor and outcome, Direct-Ambiguous. The MARS consists of stories which describe situations likely to occur in the process of medical training. The stories describe the actions of either Student actors or Other medical personnel such as faculty or residents. The MARS presents two contexts for judgment: Causal attribution for some defined outcome, or Normative attribution associated with a type of behavior. Respondents rate the behavior of the actor as responsible on a scale of 1-10, with 10 being most responsible.

The results obtained in this study replicate and strongly support the effects reported by previous research, with one exception. Attribution to authorities such as faculty was much greater than attribution to students. Direct Association between actor and outcome resulted in greater attribution than Ambiguous Association. Severe outcomes resulted in greater attribution than Mild outcomes. Stories with Good outcomes were given higher attribution than stories with Bad outcomes. This Good over Bad effect was the exception to the overall replication. All the interactions among these outcome variables, both two way and three way, were significant.

The observation that Good outcomes were given higher attribution of responsibility than Bad outcomes was not predicted from previous research and was interpreted as a reflection of the different context of judgment used in this study as contrasted to previous studies. The interaction between Severe and Ambiguous/Direct as previously reported was further explained through the three-way interaction which showed differences for Good versus Bad outcome conditions. The demonstration that Causal attribution resulted in lower scores than Normative attribution was reported here for the first time.

Respondent characteristics also showed significant effects upon the attribution of responsibility. As predicted, persons labelled Internal on a measure of Locus of

Control attributed higher scores than Middles, while Externals attributed least. Overall, faculty and student respondents did not differ in attribution of responsibility. They did differ, however, in how much the outcome variables effected them such that students showed smaller differences for Good over Bad outcomes than did faculty, but students showed larger differences for Severe over Mild outcomes.

An effort to relate responsibility attribution to a nomologic framework of interpersonal variables through the use of the Interpersonal Check List (ICL) and Attitude Toward Leadership (ATL) scale was unsuccessful. The non-significant multiple regression coefficients prevented development of an equation for predicting MARS scores from the ICL and ATL subscale variables in the sample for this study.

The primary function of this research was the development of the Medical Attribution of Responsibility Scale (MARS). It was demonstrated to have test-retest reliability, yielding correlations ranging from 0.69 to 0.76 on a second administration of the scale six to nine months after the first. Validity was assessed through independent demonstration of the respondents' perception of outcome conditions. Validity is also supported by the success with which previous research results were replicated with this instrument. The potential of this measure, and suggestions for its application in future research, are discussed.

A MEDICAL ATTRIBUTION OF RESPONSIBILITY SCALE: EFFECTS OF OUTCOME, ACTOR, JUDGMENT CONTEXT, LOCUS OF CONTROL AND OTHER PERSONALITY MEASURES

By

Gregory Thomas Loftus

A DISSERTATION

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DEDICATED TO

BILL KELL

His wisdom, patience, kindness, insight, tolerance, perseverance, simplicity, directness, and humor

are sorely missed.

I shall ever strive to pay dividends on the quantities of each which he invested in me.

ACKNOWLEDGMENTS

To all those who have made possible the completion of this research, and the process of education of which it was but a part, I would like to express my deepest gratitude. In particular, I would like to acknowledge the enduring, consistent, and salutary contributions of the Office of Medical Education Research and Development, each of its members, and especially Dr. Hilliard Jason, its first Director, and Arthur Elstein, the current acting Director. Without the cooperation of the members of the College of Human Medicine of Michigan State University, this research would not have been possible.

The preparation of this manuscript has been guided and steadied by the time, energy, and faith of John M. Schneider, my mentor and friend. The scholarship of Henry Clay Smith and his graciousness in serving as acting chairman of my committee have been essential in preserving the progress of this study and its ultimate completion. Diana Lyon has figured importantly in this paper as in all my life.

For an upbringing which has made the concept of responsibility a central theme in my life and my work, I am forever indebted to my parents and my family.

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CHAPTER I

INTRODUCTION AND REVIEW OF THE LITERATURE

A significant dimension in interpersonal evaluation is the degree to which an individual is perceived to be responsible. The concept of responsibility is the cornerstone upon which evaluation is based. Both praise and blame rest upon the assumption that a person can effect and be held responsible for the outcomes observed in his life. Accountability is derived from the concept of responsibility, and responsibility is an essential substrate of interpersonal trust. Responsibility is an important goal for some processes of training and education.

In spite of its frequent use, the concept of responsibility is only poorly understood. The term "responsibility" occurs most frequently in contexts of evaluation or definition of relationships. A semantic differential analysis of the word "responsibility" showed that the associated constructs included trustworthiness, competence, honesty, respectability, and maturity (Homant, 1969). In a list of 555 personality

trait words, ordered according to their favorableness, responsibility was ranked 28th (Anderson, 1968).

There are at least three primary functions to which the term "responsibility" can be referred.

Function I--responsibility can be considered as a personality characteristic.

Function II--responsibility can be considered as the allocation of causal efficacy for some defined outcome.

Function III--responsibility can be considered as the congruence between some specific performance and some standard of competence or ethics.

These functions can be vividly grasped in terms of their context within normal language. The first function, responsibility as a personality trait, would sound like: "You can count on John; he's a very responsible guy." The second function, allocation of causal efficacy, is frequently heard as an explanatory response. "Carol could not have moved that chair; Tom must have done it." Or, "The wind is responsible for that erosion." The third function, comparison to a standard, often reflects a role prescription: "The sergeant-at-arms is responsible for maintaining order." It can also be used to contrast

observation and expectation, as in "Paul should not have left early; he was responsible for answering the phone until 5:00."

The concept of responsibility reflects a complex interaction of these several functions. Complete specification of what constitutes responsible behavior in a given situation requires satisfaction of each of the terms in the formula--Agent X is responsible to whom, for what. Identification and exploration of these different functions of responsibility has just begun. This study will review what has been accomplished and will seek to extend those findings into an area where they have practical importance--medical education.

Issues of personal and professional responsibility are an important concern within the College of Human Medicine at Michigan State University. Since its inception, this school has participated in deliberation and research seeking to clarify an understanding of the concept of responsibility. The ways in which a responsible personality is expressed, and how they might be assessed, is an important problem in the selection procedures leading to admission. The following is from the Admissions Criterion, Michigan State University, College of Human Medicine:

> Responsibility--The sense of accountability to and for an act or job. Knowing and recognizing that something has to be done and doing it without being told (this also ties into teaching).

The factors which enhance the development of a sense of personal and professional responsibility need to be identified for inclusion in the curriculum. Procedures are sought by which responsible performance in later practice can be predicted from school performance. Even the specification of criteria for defining the space that divides responsible and irresponsible behavior currently represents a significant problem in medical education.

It is the purpose of this study to examine the applicability of findings from previous research on responsibility to the context of medical education and to progress toward an understanding of the concept of responsibility which is both more detailed and more comprehensive. This will involve the replication of some previous research conclusions. It will also require the development of a valid and reliable measure based in the medical education field. It will additionally allow for the examination of the functional relationship of this concept with other dimensions of interpersonal functioning.

Three Functions of Responsibility

Responsibility as a Personality Trait

Experience seems to indicate that some persons are more responsible than others. Some persons are said

to be responsible in a way which implies that a relatively stable pattern of behavior, or personality characteristic, is typical of that person. Such a personality trait has been examined in the literature of psychology, especially by personality and developmental theorists. That research was reported and summarized in a previous work (Loftus, 1970) and will be briefly reviewed below.

Responsibility as Causal Efficacy

The degree to which persons actually control the outcomes in their lives continues to be a matter of debate (Wann, 1964). Most persons do act, however, as if outcomes reflect their own or other persons' actions. The degree to which an individual perceives himself to control the reinforcements in his environment has been shown to correlate with his behavior. His judgments of others might be similarly influenced by his expectations of their control of outcomes. The effects of such perceptions upon judgments of responsibility and their interaction with the characteristics of different outcomes have been examined. That research will be reviewed and certain conclusions selected for replication in this study.

Responsibility as Congruence with Standard

An individual's assessment of another as responsible rests heavily upon the expectations he maintains. When such expectations are made of an individual because of a role which he occupies, they can be considered to constitute a standard which comprises the responsibilities of that role. For such a codification of expectations and the accountability function which is derived from it to operate smoothly, a prior understanding or consensus must exist between actor and judge and/or a mechanism for feedback must exist. Very little work has been done to date on the specification of such standards, at least within the field of medicine.

In the pages that follow, previous research on the concept of responsibility and related topics will be reviewed. The research paradigms which have been used, and the measurement instruments they developed, will also be discussed. From the data thus presented, a comprehensive conceptualization of responsibility as briefly presented above will be synthesized and a proposal made to extend that understanding. The proposed research will attempt to extend the findings of previous research to problems of individual assessment and development of responsibility in medical education. Such an exercise shall test the validity of the

constructs involved and will provide an opportunity for examining their interrelationships.

Literature on Responsibility as Personality Trait

The perspective of personality trait theory dominates the early psychological examination of responsibility. In an earlier work (Loftus, 1970), a basic review of that research was offered. In general, the paradigm for those studies was as follows:

> Present a definition of responsibility to a group of subjects; on the basis of that definition, have subjects select some associate or associates whom they consider to have demonstrated that characteristic in their social interactions; obtain from the subjects behaviors which they consider indicative of this responsibility characteristic; compile and consolidate these descriptions into a single profile of a "responsible person."
>
> Some research proceeded from there--using the selection by associates as criteria, form groups rated as high or low on the responsibility trait, and obtain correlations with other measures. Such measures have included demographic or developmental profiles, and questionnaire responses to attitude surveys. Some of these attitude surveys were subsequently defined as scales for measuring responsibility.

(Appendix A contains the comprehensive profile of a "responsible person," a synthesis of the research findings correlated with such a profile, and a categorization of behaviors considered indicative of that profile.)

Several difficulties with that research can be identified. First, there was at best a limited agreement among different researchers as to the definition of the

trait they were attempting to measure--responsibility. Second, there was some difficulty with the high degree of association between measures of responsibility and more general ratings of the "good person." This "halo effect" was also demonstrated by high correlations between measures of responsibility and measures of social desirability. What emerged from these observations was a reflection of the importance of situational expectations of the judge upon ratings of responsibility. This led one researcher to conclude that responsibility appeared to be less a specific trait than a quality of adjustment to a situation (Harris, 1954). This extreme position is contradicted by most researchers but has special implications which will be discussed in later sections.

The instruments which were developed by the above research became part of several personality inventories, including the Minnesota Multiphasic Personality Inventory and California Personality Inventory. In general, however, such paper and pencil measures of responsibility showed only moderate correlations with interpersonal ratings and very low correlations with self-ratings. They were also characterized by limited reliability and limited developmental differentiation. They were group tests, dependent on large numbers of subjects and of little use for individual assessment or prediction. The major significant outcome of this

work for the present study was the failure to produce an acceptably valid and reliable measure of the responsibility trait in individuals and its identification of the contribution of evaluation situation to judgments of responsibility.

Congruence with Standards

In examining the relation of given behaviors to judgments about the concept of responsibility, it became clear that some behaviors could be responsible from one point of view and not responsible or even irresponsible from another point of view. This reflects the understanding that persons with different goals label acts responsible in terms of the relation between the act and the goal. That view can be formulated as--Behavior X is Goal A responsible to the degree that it leads to Goal A. Evidence of this principle was observed in earlier research (Harris et al., 1954; Havighurst & Taba, 1949) wherein obligations to school and family came into conflict. Responsible behavior was then related to the priorities assumed by the Judge. Recognition of this phenomenon led to an examination of the effect of role relations on the perception of responsible behavior.

For a well-established role, such as physician, it could be tested whether persons with different relations to that role would express different expectations. The differential conceptions of physician

responsibility among medical subgroups were examined to make that test (Loftus, 1971). That study revealed that while there was great similarity in the categories of behavior given as examples and definitions of responsibility, reliable differences were obtained across role groups. Patients, paramedical personnel, medical students, medical faculty, and practicing physicians each emphasized slightly different aspects of responsibility.

Significant in its frequency as a definition of responsible behavior was the statement of the "golden rule"--do unto others as you would have them do to you. This statement carries the implication of some common set of Goals according to which specific behaviors might be judged. Or, it might be considered an algorithm for the evolution of such goals. As such, it reflects back to the conceptualization of responsibility as "quality of adjustment" which Harris proposed. An alternate algorithm may be derived from the experience of those frequently called upon to make judgments of responsibility (Saslow, personal communication, 1972). Interviews with such persons indicate that an important quality of those who are rated high on responsibility is that they establish interpersonal contracts characterized by a high degree of feedback. That is, persons rated high in responsibility are perceived as seeking and obtaining information about how their performance compares to the judge's

expectations. This familiarity with the judge's perceptions of his behavior, and the norms to which it is compared, allows the performer to improve his responseability, and hence his ratings by the judge. The generalization of this type of situation, and the codifications of the expectations of judges, may be an important part of a program for developing responsibility. To date, the limited investigation of such patterns is found largely in social role analysis and is beyond the scope of this paper. It is clear, however, that there is no clear active conception of such standards within the field of medicine.

Responsibility as Causal Efficacy

The area of investigation of the concept of responsibility which currently receives the most attention in the psychological literature, and represents the leading edge of theory, deals with the perception of responsibility as the degree of causal control exercised by a person. Two such perceptions are immediately distinguishable. One in which the actor is oneself and this area of inquiry is dominated by the construct of Locus of Control. The other, in which the actor is someone else, is best subsumed by the rubric Attribution of Responsibility.

Attribution of Responsibility

An alternative to focusing upon responsibility as a personality trait is to examine the process of making judgments about the degree of responsibility demonstrated by another. Through a series of research efforts, it has been demonstrated that the degree to which one person holds another responsible for events in the interpersonal life space is a significant determinant of interpersonal behavior (Shaw & Sulzer, 1964). By "holds responsible," Shaw and Sulzer mean that the judge perceives the acting agent to be the cause of a given outcome. They established a direct linear relationship between the degree to which the judge perceives the actor to be the cause of the outcome and the degree or amount of responsibility the judge would attribute to the actor for that outcome. They also demonstrated that the perceived causality of the actor can be systematically influenced by several variables.

Among the variables shown to influence the amount of attributed responsibility were:

The degree of environmental determinism, as a measure of an actors Association with the outcome. Five levels of Association were tested and can be briefly described as follows:

1. The actor is associated with, but did not produce, the outcome.

2. The actor produces an unforeseen and unintended outcome.

3. The actor produces a foreseen, but unintended, outcome.

4. The actor produces an outcome that is both foreseen and intended.

5. The actor produces a foreseen and intended outcome, but does so under coercion.

The perceptual differentiation of the developmental level of the judge had a significant effect. As judges' character was shifted from young children to adults, increasing sophistication in differentiation of environmental determinacy was demonstrated. The amount of attribution became more distinctly different although the same directional increase maintained. Allied research (Shaw, Briscoe, & Esteve, 1968; Shaw & Schneider, 1967; Garcia-Esteve & Shaw, 1968; Sulzer, 1965) demonstrated other effects.

The Quality of the outcome--good or bad--influenced amount of attribution such that negative outcomes resulted in greater amounts of attribution than did positive outcomes.

Severe outcomes were shown to result in higher attribution scores than mild outcomes to define an Intensity variable. It was also demonstrated that less

responsibility was attributed when the actor was a child and that authorities received significantly more attributed responsibility (Mischel, 1961). Personal similarity to the actor lessened the amount of responsibility attributed by judges and increased the leniency of evaluative judgments in general (Shaver, 1970).

The paradigm used by Shaw and Sulzer and their followers for examining the relationships reported above involved the presentation of a series of stories to different groups of subjects who acted as judges. In those stories, the variables mentioned above were systematically varied across different combinations to produce the effects subject to statistical test. The preparation of the stimulus materials for that research is the prototype for the paradigm to be used in the study proposed by this paper and is elaborated in the methods section. Finally, after reading each story the judge would assign a simple numerical rating to reflect the amount of responsibility he attributed to the actor under that conflux of variables.

Diffusion of Responsibility

A related approach to the study of responsibility has examined the attenuation of perceived or attributed responsibility as a function of the number of persons involved in the circumstance. Wallach, Kogan, and Bem (1962, 1964) reported that decisions made by groups

showed greater attached risks than similar decisions made by individuals. Further evidence suggested that this effect could be outweighed by manipulation of such variables as the moral context of the decision, riskiness of the most vocal group member, or accurate knowledge of outcome probabilities (Bem, personal communication, 1970). The effect of diffusion has been dramatically shown and replicated in another series of experiments (Darley & Latane et al., 1968; Borofsky, 1970). These studies have shown that the more bystanders to an emergency, the less likely and/or more slowly any one bystander will act to intervene. They explain their results through an analysis of the thought processes of the bystander. "Is the situation a real emergency?" The behavior of the other observers is used as a strong cue to decide, and their inactivity prolongs the ambiguity. "If it is an emergency, what can be done, and am I the best person to do it?" This decision also relates to his perception of the other observers. These self-directed questions are answered from the persons matrix of experience and self-perception. Perceived control over outcomes is one predominant vector in that matrix.

Locus of Control

The study of psychological aspects of causality and responsibility has been pursued under a wide range

of terminology. Brehm and Cohen (1962) discussed what they called volition, by which they meant the power for "initiation and selection of behavior" and acceptance of its consequences. White's (1959) concept of "competence" converges on similar variables. Schneider (1968) presents a review of related personality constructs which includes the "feeling of efficacy" (Piaget, 1930), "trend toward autonomy" (Angyal, 1941), as well as parts of the theory of Adler, Jung, Reisman, and Witkin among others. Indeed, a great portion of the theory and research on motivation can be considered relevant since the issues of control of behavior and outcome are central to such discussion.

Of special interest is Heider's (1958) development of social learning theory and his formulations of social perception, power, origin, and causality. In addition to providing the original postulates of the study on attribution of responsibility covered earlier, Heider's work stimulated the investigation of control as a psychological construct. Led by Julian Rotter, a prolific stream of research has investigated the dimension of internal versus external locus of control in examining the perception of causal efficacy.

In 1966 Rotter published his manuscript on generalized expectancies for internal versus external control of reinforcement. In that treatise he defined

a dimension of internal versus external as a function of the degree to which a person perceives the events in his life space to be a function of himself versus chance, fate, or powerful others. He developed the Locus of Control Scale to measure this characteristic and began a veritable deluge of studies--some 300 to date--which investigate the scores on such a scale in relation to behavior in a wide range of experimental conditions or to scores on other paper and pencil tests. The original scale has developed into multiple forms for different populations, and the underlying concept has been further differentiated.

A recent review of the internal-external control construct offers the following summaries (Joe, 1971). The reliability measures of the I-E control scale have been consistent. Test-retest reliability reported by Rotter for varying population samples range from .49 to .83 across intervening time periods ranging from one to two months (1966). Hersche and Schiebe (1967) reported a similar range for a two-month time period. Harrow and Ferrante (1969) found a .75 test-retest reliability. Internal consistency measures ranged from .69 to .79 with nearly all in the .70's (Rotter, 1966).

Several factor analytic studies of the I-E scale have indicated a need for further differentiation between

those aspects of a person's world view which indicate a personality trait and those which reflect societal norms (Dies, 1968; Gurin, Gurin, Lao, & Beattie, 1969; Lao, 1970). Despite this, the research findings to date tend to form a cluster which is logically and theoretically consistent with the I-E construct. The findings depict externals in contrast to internals, as being relatively more anxious, aggressive, dogmatic, and less trustful and more suspicious of others; lower in self-confidence and insight; having low needs for societal approval; and having a greater tendency to use sensitizing modes of defenses (Williams & Vantress, 1969; Feather, 1967; Hamsher, Geller, & Rotter, 1968; Miller & Mintion, 1969).

Negroes and lower class individuals generally have more external scores than whites and middle class individuals. Data are consistent with the theoretical expectation that individuals who are restricted by environmental barriers and feel subjected to limited material opportunities would develop an externally oriented outlook on life (Battle & Rotter, 1963; Lefcourt & Ladwig, 1965, 1966; Scott & Phelan, 1969; Parsons, Schneider, & Hanson, 1970).

Evidence for developmental antecedents of I-E is scarce. Individuals on the extreme ends of the I-E scale are more maladjusted than those in the middle

range. Pathological individuals tend to have higher external scores than do normal populations. An external expectancy of control can be shown to change toward an internal frame of reference after therapeutic interventions and after resolution of crisis (Harrow & Ferrante, 1969; Smith, 1970; Gottesfield & Dozier, 1966; Gillis & Jessor, 1970).

Externals describe themselves as more anxious, less able to show constructive responses in overcoming frustrations, and more concerned with fear of failure than achievement per se. Internals will not only show more initiative and effort in controlling their environments but can also control their own impulses better than externals. Although there is some negative evidence, it seems that internals, in contrast to externals, show a greater tendency to seek information and adopt behavior patterns which facilitate personal control over their environments (Butterfield, 1964; Feather, 1967; Tolor & Reznikoff, 1967; Ray & Katahn, 1968; Phares, 1965; Seeman, 1963; Davis & Phares, 1967; Crandall, Katkovsky, & Crandall, 1965; Solomon, Houlihan, & Parelius, 1969).

The notion that internals perform more efficiently under skill conditions while externals do better under chance conditions receives inconclusive support. Clearer evidence suggests that internals are

more cautious and conservative in risk-taking situations in an effort to control events. The hypothesis that internals are more resistive to perceived environmental manipulation is only partially supported, with data suggesting the influence of other variables (Liverant & Scodel, 1960; Minton & Miller, 1970; Schneider, 1968; Rotter & Mulry, 1965; Watson & Baumal, 1967; Getter, 1966; Strickland, 1970; Baron, 1969).

In summary, while the findings are not remarkably consistent, the data from a bewildering array of experiments generally tend to support Rotter's contention that the internal-external control construct is a generalized expectancy which can be shown to have significant influence across many interpersonal situations.

Locus of Control and Attribution of Responsibility

The locus of control construct has been shown to represent a generalized expectancy of a person which reflects the degree to which he perceives the events in his life space to be subject to his control versus external factors such as fate, chance, or powerful others. The attribution of responsibility represents a process in which individuals make judgments about the degree to which an acting person is held accountable for outcomes in the interpersonal life space. A logical relationship can be proposed between these two variables

which would suggest that internals would attribute more responsibility to acting persons than externals in a projection of their personal expectancy. Such a relationship has been supported by recent research. Phares, Wilson, and Klyver (1971) demonstrated that in specific situations, internals attribute greater responsibility to themselves for the consequences of their own actions than do externals. In 1972, Phares and Wilson extended those findings to show a similar pattern, such that internals generally attributed more responsibility than did externals when attributing responsibility for an accident to a defendent in court action.

This research also resolved a set of contradictory findings concerning the degree of attributed responsibility as a function of severity of outcome. Shaw and others' original research showed a significant increase in attributed responsibility as outcome severity increased. Walster (1966) found similar effects. However, support was not found in other experiments (Walster, 1967; Shaver, 1970). Phares and Wilson examined the stimulus stories used in the different studies and proposed the interaction of a variable based on the ambiguity versus structure of the story. This variable seems identical to the environmental determinacy variable noted by Shaw and Sulzer (1964). Phares and Wilson tested for this

interaction in their own research and in fact found that in cases of ambiguous degree of association between actor and outcome little responsibility was attributed with severe outcomes. However, when the cases were clearly structured in terms of the causal association between actor and outcome, attribution of responsibility significantly increased with severity of outcome. They also reported an interaction between I-E and attribution such that under severe ambiguous and mild structured conditions, internals attributed significantly more responsibility to the actor than did externals. In severe outcomes, they concluded that the direct structure appeared to outweigh the effects of the I-E variable. In mild ambiguous conditions there was also no observed difference between internals and externals.

It is an unfortunate artifact of the research paradigm that Phares and Wilson's results cannot be directly compared to Shaw and Sulzers. The former researchers used stories presented in the context of a trial by juries and subjects were told the purpose was to study decision making in that context. Hence, subjects were role playing and even more significantly were attempting to emulate a process which is circumscribed by special norms. In marked contrast, the Shaw and Sulzer stories were derived from common incidents

encountered in everyday living where the normal mode of interpersonal perception could be expected to dominate. It would seem that investigation of these effects of outcome intensity and of the degree of association between actor and outcome, and of their interaction with the I-E variable, needs further development.

An additional contribution of the Phares and others' studies was the use of multiple measures of the attribution of responsibility. In addition to the simple scale rating of the amount of attributed responsibility, they had subjects impose monetary fine and propose re-educational service on the actors in their stories. They found that all measures were in the same direction for significance and that the simple scale rating resulted in the highest scores.

Responsibility and an Interpersonal Nomologic Net

The significant difficulties in defining and measuring responsibility as a personality trait have been previously discussed. Both the research on Attribution of Responsibility and Locus of Control have indicated, however, that the concept of responsibility has an important function in interpersonal behavior. The nature of that function remains to be defined. The theoretical consideration of that relationship rests

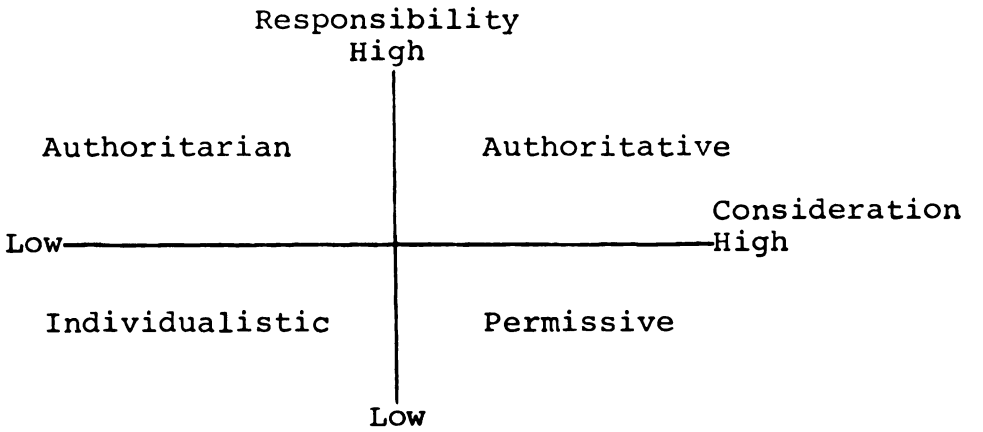
upon the development of a system for identifying the dimensions of interpersonal interaction.

In a conceptualization of the dimensions of interpersonal competence, Smith (1968) presented a two-factor coordinate system based upon the constructs of Consideration and Responsibility. In this context, Responsibility is defined as the degree to which an individual feels and acts as if he were holding himself accountable for what happens in a situation or to a person. Consideration reflects the tendency to know and respect the rights and feelings of others.

These ideas represent a distillation of research and theory from a wide range of sources. The writings of personality theorists, notably Erich Fromm (1956), presented the notion of a limited number of factors as defining the interpersonal space. From industrial psychology, the literature on leadership was culled to define two dimensions which were consistently found to account for much of the observed behavior (Fleischman, 1953; Dore, 1960). Developmental theory and research also contributed support (Schafer & Bayley, 1963).

On the basis of empirical evidence, Smith suggests that the two dimensions of Consideration and Responsibility are independent; and he proposes that they constitute an orthogonal coordinate system into which other interpersonal factors might be mapped.

He characterizes the different quadrants as indicative of different interpersonal styles.



As a measure of the attitudes indicative of a person's position on these two dimensions, Smith proposes the use of the Attitudes Toward Leadership Scale (ATL). This scale is a 32-item forced choice inventory of possible behaviors which a leader can demonstrate. The scale yields a score for each dimension. The Attitudes Toward Leadership Scale (ATL) is a shortened version of the Leadership: Employee Orientation and Differentiation Questionnaire (LEAD) which was developed by Dore (1960). The LEAD questionnaire has been successfully tested for reliability and validity and used for the training and improvement of interpersonal skills.

The evidence that two principle dimensions encompass a broad variety of interpersonal behavior has been forcefully presented by Hurley (1971). He

cites Allport's (1961) observation that a two-dimensional structure has been used for categorizing personality types into a comprehensive system since the time of Hippocrates. Factor analytic studies of several psychological constructs have similarly resulted in two primary dimensions (Borgatta, Cottrell, & Mann, 1958; Burke & Bennis, 1961). The first of these prepotent dimensions is labelled by Hurley as Acceptance versus Rejection of Others (ARO), after Symonds (1939) and Bierman (1969). The second dimension's most appropriate label is more controversial, but Hurley concludes that its most reasonable label might be Self-Acceptance-Rejection (SAR). Hurley further suggests that these two prepotent dimensions might be validly assessed by the two principle factors of the Interpersonal Check List (ICL) (LaForge & Suzek, 1955; LaForge, 1963). Validation that the two principle factors of the ICL present an orthogonal coordinate system which can be used to locate different personality types has been presented by Lange (1970). The ICL factors are designated Dom and Lov and are calculated from individual item responses on the Interpersonal Check List (ICL).

It is the thrust of Hurley's argument that an important step in the investigation of variables considered to operate in the interpersonal space must be to define their relation to these prepotent dimensions

which have found such reliability across time and situation. The reference of different variables to a relatively stable nomologic net offers significant opportunity to examine their relative importance and should provide for new insights of their interrelationships, providing valuable leads toward improved assessment and prediction.

A Conceptualization of Responsibility

The three functions of responsibility presented in the introduction reflect a conceptualization of the concept of responsibility as derived from the research just reviewed, the philosophical debate of centuries, and a formulation of the developmental learning process. Repeated instances of the use of the term "responsibility" have been examined for inclusion in one or the other of those functions. To date, they seem to represent a sufficiently comprehensive system. As a personality characteristic, common usage and the research discussed imply a relatively stable pattern of behavior which reflects the person's evaluation by others as showing a constellation of behaviors of which dependability has been shown to be predominant. The person shows consistency in meeting the interpersonal contract expected by others. As causal efficacy, responsibility involves judgments about the amount of control exercised over outcomes.

It can be self-referent, as in Locus of Control, or can refer to others as in the Attribution of Responsibility process. In either case, it has been demonstrated to influence the process of interpersonal behavior. Responsibility as congruence with a Standard defines the set of uses of that term which include references to competence or ethic and often implies a codification of expectations with reference to a defined role. This function also allows for the treatment of behavior considered irresponsible although that topic will not be taken up in this paper.

On the basis of this conceptualization, a formula for defining responsibility involves the specification of the outcome, the actor, and the judge. Such a formulation can be expressed as--Agent X is responsible to whom, for what. Adequate definition of each of those terms allows for a satisfactorily operational use of the term "responsibility."

Development of Responsibility

Research on the developmental antecedents of responsibility as a personality trait has been largely inconclusive. There was little support demonstrated for the principles of the folklore of child rearing which proposed that household tasks and firm parental discipline were needed (Bronfenbrenner, 1961). The antecedents of internal versus external have remained

similarly vague or undefined on the basis of the limited research reported (Joe, 1971). Understanding of the process of development of responsibility must therefore remain in the realm of theoretical speculation, derived from experience and what relations can be drawn from apparently relevant data, and bounded by the same factors. Such speculation will be offered here for the purpose of at least providing a framework from which hypotheses can be drawn for empirical test. This development rests mainly on the evolution of social perception in relation to learning theory and motivation.

In his text, Personal Causation, Richard de Charms (1968) provides a review of psychological theories of motivation. From this he develops a conceptualization of the construct of causality based upon developmental self-awareness and the special qualities inherent in the perception of persons, as opposed to objects. He describes the absence of any empirical justification for the concept of causality since physical events can only demonstrate contiguity either temporal, physical, or both. Contingency remains an inference, usually based on statistical probabilities and/or experience of that contiguity. deCharms postulates that the notion of causality evolves from self-awareness of intention. As a child becomes aware of its efficacy in achieving changes in its environment as a function of intended

effort, it develops the idea of itself as origin or cause. In making an intended effort and achieving an intended outcome in the environment, a person develops a sense of responsibility or accountability for that outcome. Person perception includes an awareness of other persons as similarly capable of such intended effort and leads to similar perceptions of such persons as responsible for outcomes in the environment.

The theoretical development proposed by deCharms provides a context for understanding both the locus of control construct and the process of attribution of responsibility. It also suggests the nature of their demonstrated interrelationship. Support for this theory can also be drawn from other research.

An ingenious comparison was performed by Seligman (1969) in a series of studies with dogs which examined the consequences of different learning or conditioning paradigms. He demonstrated that dogs trained first in a classical conditioning paradigm exhibit a characteristic he termed "induced helplessness" when transferred to a training context of an operational conditioning paradigm. Specifically, in the classical conditioning sessions the dogs were taught that the onset of a buzzer preceded administration of a shock. The classical conditioning paradigm does not allow for the animal to have any control over the outcome, and the

dogs received the shock at a set interval. After such training, the dogs were transferred to a jump box, which meets an operational conditioning paradigm. Here too the onset of the buzzer precedes administration of an electric shock. In this paradigm, however, the dog can exercise some control over the outcome by jumping from one side of the box to the other prior to the onset of the shock. Unlike naive dogs, the dogs trained in the classical paradigm exhibited the induced helplessness which maintained their presence to shock. They did not exercise the control that naive dogs quickly learned. In fact, in order to get the dogs to move away from the shock, Seligman had to completely remove the jump barrier, attach a rope to the dog's neck, and drag it across to the safe side. It took a replication of this procedure as many as 60-100 times before some of the classically conditioned animals learned that they could exercise control to avoid the shock. In terms of the constructs previously discussed, having learned a completely external locus of control, it was difficult to train the animals toward an internal locus. In contrast, dogs trained first in the internal locus setting of the operational paradigm endured the classical paradigm but were able to re-assume an internal locus when the situation allowed. These data clearly point to early

experiences as important for the establishment of locus of control expectancies.

Material derived from clinical psychology on the development of psychopathology also suggests the importance of early learning about the locus of control. The so-called schizophrenigenic mother or family is characterized by a communications pattern which prevents a child from experiencing reliable associations between its own behavior and environmental outcomes. It could be said to thus foster the development of an external locus of control perception. Having once learned that locus, the child might be typified as failing to exercise control, even when it is possible. Such behavior is typical of adult schizophrenics. Related to this idea also is clinical data and research on depression. The classical statement of the depressive syndrome might be "it doesn't matter what I do": A clear statement of a perception of external locus of control. The frequent association of depression with outcomes which in fact are under external control, such as the death of a loved one or other irreplacable losses, is entirely consistent with the theory. So also is the most successful form of treatment--activities which reinforce an internal locus again.

Perhaps the most significant support of deCharms postulated developmental sequence comes from Piaget's

(1965) meticulous elucidation of the child's conceptualization of causality and his own theories derived from that data. The features of projection and the assumptions of similarity which are demonstrated both for other persons and objects fit the theory. The beliefs of primitive tribes have been shown to operate upon similar projections of causal efficacy upon objects both real and conceived. Finally, the effects of the developmental level of the judge in terms of differentiation of the different levels of causal determinacy which was demonstrated by Shaw and Sulzer (1964) implies a developmental scheme consistent with deCharms' theory.

It is worth noting that this theory of the development of responsibility is derived within the context of interpersonal communication. The importance of feedback and/or verification of expectation and performance is crucial. This same operation, of establishing an interpersonal contract which provides for such feedback, may become a more successful substance with which to work toward the assessment of responsibility as a personality trait.

Responsibility and Evaluation

The most common context in which the term "responsibility" is used has to do with defining or evaluating a relationship. It is especially clear in dealing with the evaluation of an individual's

performance in his role. For most roles, some consensus exists about the duties or responsibilities which it encompasses. For a few, there is a clear specification of the standards and the criteria by which specific performances can be compared. Certainly, the clearer the standard and criteria are expressed, the easier it is to evaluate the degree of responsibility met by a person's performance. The terms of the formula--Agent X is responsible to whom, for what--are defined.

Within the context of education, the process of assessing a person's performance can be more complicated. To the degree that the educational process is designed to prepare the student to adequately fulfill the responsibilities of a professional role, he cannot be expected to demonstrate such performance until the relevant educational processes are accomplished. Observation reveals that, in fact, students are not usually expected to portray adequate role performance. The process of observation, practice, supervised performance, and finally independent performance has intuitively and explicitly been a part of education by long tradition. At different stages of the educational process, the student is in fact held accountable not for professional role performance, but for a series of enabling performances concerned with motivation, attention, participation, and mastery of certain building blocks upon which the final professional performance rests.

Confusion can arise from this process, however. It is unfortunately the case that there is no perfect or even linear progression from responsible performance of the tasks of a student to the tasks of the professional. In fact, within medicine it can be argued that there is no such progression. Performance in early medical school, as measured by grades or certified exams, is totally unrelated to performance in either the clinical years or subsequent practice as measured by the judgments of observers in the clinical setting. It would seem there has been some confusion of the standard to which the student's performance should be compared in evaluating his preparation to meet professional responsibilities.

The evaluation of responsibility can be improved by the clarification of the standards to which a performance is compared. In combination with the development of educational objectives, the use of the Mastery Model as presented in the Keller plan (1974) for instruction is most consistent with this goal. The Mastery Model (Ways, 1970) simply re-instates the practicing professional as the standard to which a student's performance is compared. This process also allows for a greater freedom in the enabling performances which can be accepted as legitimate and assesses their adequacy in terms of their success in moving the student toward

the Mastery standard. Behavior X is Goal A responsible to the degree that it leads to Goal A. By analogy, the assessment of responsibility emphasizes the destination rather than the path used to get there.

It is a corollary to the Mastery Model that evaluation of the progress toward professional standards must make it clear to the student what parts of those standards he has matched. Subsequent to such matching, he is assumed to be able to continue such performance. This allows for resolution of the question of whether a given substandard performance reflects ability or some combination of other factors. Having performed to adequate standards for evaluation, the student has demonstrated ability, i.e. causal potency has been established. When failures to meet the standards are observed, the student can be held accountable for the different allocation of his established resources in terms of attending to some other set of priorities, or standards.

When an individual is examined for the purpose of assessing his performance of his responsibilities, it often becomes clear that there are conflicts among several specific objectives which prevent his adequate performance of them all. Under such circumstances, a set of decision rules are often evolved which assist the person to select a best resolution of the observed conflict. These decision rules reflect a system of

priorities or a hierarchy of values. Such hierarchies are seldom presented to the novice in any coherent form. Rather, they are implied in a variety of experiential contexts, and their formulation is left to the individual. This condition is the result of, and a factor which maintains, the lack of consensus on standards which would assist the ultimate identification of responsibility. Such formulations become a necessary step in the process of defining the concept of responsibility in medicine. For the present they must constitute the grounds for debate which may generate a clearer understanding of responsibility, its operations, and realistic measures.

CHAPTER II

STATEMENT OF THE PROBLEM

The operations of the concept of responsibility within the field of medicine have not been well defined. It is the purpose of this study to examine, within the context of medical education, some of the conclusions which have been drawn from research on responsibility in other settings. In addition to providing a replication of that research, this study will add a significant dimension of practicality to the constructs involved. As discussed in the review of the literature, additional investigation is especially required to resolve conflicting results dealing with the interaction of several variables. The situational variables of outcome intensity and degree of association between outcome and actor have shown contradictory findings. Their interaction with the locus of control variable was also found to be constricted. The effects of each of these variables on the amount of responsibility attributed will be re-examined. This study will define situations in medical education

and use medical students and faculty as actors and judges to re-examine the conclusions of previous research.

In order to accomplish this translation, an instrument is required which describes medical contexts for responsibility judgments. Such an instrument must contain systematically varied presentations which cross the levels of outcome direction and intensity as well as degree of association between actor and outcome. In addition to the above variables which relate to the responsibility function of causal efficacy or control, investigation of the function of responsibility as congruence with a standard should be included in order to begin the integration of the several identified functions of responsibility. The latter function, comparison to standard, would involve the presentation of situations which require the judge to compare the behavior of an actor to the judge's personal standards of normally or exceptionally responsible behavior, without reference to a specific outcome for the performance. The development and trial of such an instrument constitutes the primary function of this study.

The second major thrust of this research reflects the need to deal with the concept of responsibility as a portion of a more comprehensive understanding of interpersonal behavior. Toward this end, the specific

measures of responsibility functions must be related to other measures which can be used to define a nomologic net for interpersonal behavior within which a more comprehensive and unified discussion can occur. The theoretical coordinate systems upon which the Interpersonal Check List (ICL) and the Attitudes Toward Leadership (ATL) are based offer such a framework for encompassing the interpersonal space.

In addition to broadening the discussion of responsibility, the inclusion of the ICL and ATL in this study represents a step toward the model of a multi-trait multi-measure theory proposed by Campbell and Stanley (1963). Clearly, responsibility represents the kind of complex concept for which such an approach is most appropriate. Inclusion of the variables assessed by the ICL and ATL also provides a step toward the reintegration of the function of responsibility as a personality trait. It is the second function of this research to examine the position of the concept of responsibility within a nomological net which defines the interpersonal space.

The problem analysis can now be reformulated to provide more operational statements for the conduct of the study. Parts of the problem will be identified, and the questions to be asked of the data will be derived.

Outcome Variables, I-E, and Amount of Attributed Responsibility

Several variables have been shown to effect the amount of responsibility attributed to an actor in a given situation. Shaw and Sulzer (1964) found that bad outcomes resulted in greater attribution than good outcomes. This variable is here after called Quality of outcome, good vs. bad. They also found that severe outcomes resulted in greater attribution than did mild outcomes. This variable is called Intensity of outcome. This latter effect was found to be modified by the directness of association between actor and outcome by Phares and Wilson (1972) who did not include the direction variable. The inconsistency between these two research efforts was complicated by different research paradigms. While Shaw and Sulzer used occurrences from everyday life, Phares and Wilson used an occurrence presented as a jury trial and asked their subjects to role play in making their responses.

In order to resolve the uncertainties left by the differences noted above, the effects of the degree of association between actor and outcome will be re-examined. This variable will be called Association and shall be presented in a binary condition of ambiguous or direct association between actor and outcome.

The paradigm for this research will parallel that of Shaw and Sulzer. In contrast to Wilson and

Phares role-playing situation, in which they attempted to bring a personal involvement of the subjects into the experiment by manipulating their similarity to the actors in the jury case, this study will present stories in which the judges are personally involved by virtue of their daily lives. The effects of the variables will be examined in a medical context in which medical students and faculty act out incidents which the judges are likely to meet in their own lives. Thus the participants will not role play but will in fact be asked to express on this instrument the judgments encountered in their own interpersonal space.

The variables to be presented in the stories of this instrument will be the outcome variables of Quality, Intensity, and Association. A complete crossing of these variables results in the formation of eight cells as depicted below.

Table 2-1

Predicted Order for Effects of Story Outcomes

	Ambiguous		Direct	
	Severe	Mild	Severe	Mild
Good	4	1	7	3
Bad	5	2	8	6

In each case, the predicted direction of the results is indicated by underlining the direction of the variable which is expected to result in the greatest attribution of responsibility. The numbering within the cells indicates an expected ordering of the amount of attributed responsibility under those conditions with 1 being least and 8 greatest.

In addition to the effects of outcome variables, the differences in paradigm used by Phares and Wilson leave the operation of the locus of control construct in nonrole-playing contexts uncertain. To explore this, the relation between I-E and outcome variables will be re-examined in this study using the instrument which shall henceforth be called the Medical Attribution of Responsibility Scale (MARS). Defining Story as one major effect and I-E as another allows the creation of the diagram on page 44. Story conditions are ordered according to the previous diagram. Three groups are defined for the I-E variable.

The Medical Attribution of Responsibility Scale (MARS) will be used to obtain scores on the attribution of responsibility for stories which represent a completely crossed presentation of the outcome variables Direction, Intensity, and Structure. The Locus of Control construct will be measured by a newly developed form of the I-E Scale. The questions to be asked of these data are as follows:

Table 2-2

Design of Controlled Study of Outcome and Locus of Control Effects Upon Attribution of Responsibility

		Story							
		1	2	3	4	5	6	7	8
		Good Mild	Good Mild	Good Severe	Good Severe	Bad Mild	Bad Mild	Bad Severe	Bad Severe
		Ambig.	Direct.	Ambig.	Direct.	Ambig.	Direct.	Ambig.	Direct.
Locus of Control	Internal								
	Middle								
	External								

1. Does the variable of outcome Quality exert a significant influence upon the amount of attribution observed in a medical setting?

2. Does the variable of outcome Intensity exert a significant influence upon the amount of attribution observed in a medical setting?

3. Does the variable of outcome Association with actor exert a significant influence upon the amount of attribution observed in a medical setting?

4. Does the variable of judge's locus of control exert a significant influence upon the amount of attribution observed in a medical setting?

5. Do interactions among these variables occur which exert a significant influence upon the amount of attribution observed in a medical setting?

6. Do faculty and students differ in the amount of attribution or pattern of interactions?

7. Do differences exist in attribution for a specific event's outcome and for a general behavior?

8. Do differences exist in attribution to different groups of actors?

Responsibility and a Nomologic Net

No previous study has reported on the relationship between the concept of responsibility and a nomologic coordinate system for interpersonal behavior, except the proposition by Smith (1963), that responsibility be used to define one dimension of such a system. The existence of prepotent dimensions offers an opportunity for additional examination of such relationships. Smith's conceptualization presents Responsibility and Consideration as two orthogonal factors of a coordinate system. An alternative conceptualization, summarized by Hurley (1971), presents Acceptance-Rejection of Others (ARO) and Self-Acceptance Rejection (SAR) as alternative dimensions for such a coordinate system. Acceptance Rejection of Others (ARO) can be assessed by the Interpersonal Check List (ICL) factor of Dom. Self-Acceptance-Rejection is assessed by the ICL factor of Lov.

The similarity between the constructs of Responsibility as used by Smith and the Dom factor of the ICL suggest that there may be a strong correlation between scores on these two scales. Likewise, Lov and Consideration can be expected to have a strong relation. By administering both these instruments to the same group, an estimation of their similarity will become readily available. In addition, the two different instruments can be compared to establish a stable system of

coordinates for locating more specific measures of responsibility function. Thus, comparisons can be made not only between the Interpersonal Check List scores and scores on the Attitude Toward Leadership scale, but similar comparisons can be made with scores on the Locus of Control scale and scores of the Medical Attribution of Responsibility Scale.

The questions to be asked of the data gathered from the Interpersonal Check List (ICL), the Attitudes Toward Leadership Scale (ATL), the Locus of Control scale (I-E), and the Medical Attribution of Responsibility Scale (MARS) are as follows:

1. Do the scales of the ICL and ATL correlate highly enough that they can be considered to define the same coordinate system of interpersonal behavior?
2. If so, what is the unique contribution of each?
3. If not, what are the observed differences?
4. If not, what are the relationships between the two systems?
5. Does Locus of Control correlate significantly with any of the four scales defined by ICL and ATL to indicate a special relationship, or can the scales be used to locate different scores on the locus of control construct within different quadrants of the coordinate system?

6. Do scores on the Medical Attribution of Responsibility Scale (MARS) correlate significantly with any of the four scales defined by ICL and ATL to indicate a special relationship, or can scores on the MARS be used to locate persons in different quadrants of the coordinate system?

7. Can a regression equation derived from these several scales be used to predict scores--on each other?--on other psychometric instruments?--interpersonal behavior or ratings?

CHAPTER III

METHODS AND PROCEDURES

This chapter includes the presentation of details on the conduct of this study. The participants are identified. The instruments used to measure the several variables are described, and the character of tests is given. The design of the study is proposed, and the hypotheses to be tested are stated. The analyses of the data are identified. Finally, a summary is provided.

Subjects

Members of the College of Human Medicine at Michigan State University responded to the different test scales for this study in cooperation with a project identified with the Office of Curriculum Implementation and the Dean for Student Affairs Office. All participants were invited to assist this project through cover letters signed by the Associate Dean. (Copies of those cover letters are included in Appendix B along with copies of each of the instruments used.) The faculty identified as the sample for this study were those acting as small

group leaders during Phase I, in fall quarter 1972. This sample included Ph.D.'s from both biological and behavioral sciences as well as M.D.'s. It also included the upper class students who were acting as co-faculty in the group exercises that term. Student samples were the members of the entering classes of 1972 and 1973.

The 45 faculty were asked to complete the International Opinion Survey during April of 1973 and to respond to the Attitude Toward Leadership Scale, the Interpersonal Check List, and the Medical Attribution of Responsibility Scale during July 1973. The 85 students of the 1972 entering class were asked to complete the ATL, the ICL, and the MARS during May 1973. They had completed the IOS as part of a battery of tests taken during an orientation period at the beginning of fall term. The 90 students entering in 1973 took the four measures for this study as part of that same Entry Profile battery in September 1973. All respondents were identified only by a confidential code number which the experimenter could not associate with names.

Of the 45 faculty in the sample, 34 sets of data with scores on all four measures were collected and put into analysis. From the 85 members of the 1972 entering class, 71 sets of complete data were received. Fifty-seven sets of data with scores on all four measures were

collected from the 90 students taking the Entry Profile in September 1973. The above data are summarized in Table 3-1.

The representative qualities of the obtained scores were deemed acceptable. That is, comparison of the mean scores of those respondents who completed all four measures showed no significant differences from the mean scores of all subjects responding for each specific scale. Of the 11 faculty not responding to the survey, a variety of excuses was received. During the interview at which the forms were delivered, one responded that he was neither competent nor concerned about issues such as responsibility in medicine. Another explained that honest responses might be threatening to the school authorities and his own advancement. Still another claimed to be incapable of responding to the form of the items in the study measures to express his personal convictions relevant to responsibility in medical education. No consistent reasons indicative of a response bias were seen in such rationalizations.

The high cooperation of the class of 1972--71 of 85 turned in complete data sets (83%)--seemed to expose a special pertinence of responsibility issues to students by the end of their first year of medical school. That response rate was achieved in spite of the unfortunate closeness of the survey to exam time and the end of

Table 3-1

Dates of Test Administration to Respondents

Group	N	Responding		Instruments			
		#	%	MARS	ICL	ATL	IOS
Faculty	45	34	77%	July, 1973	July, 1973	July, 1973	April, 1973
Medical Students Entering 1972	85	71	83%	May, 1973	May, 1973	May, 1973	Sept., 1972
Medical Students Entering 1973	90	57	64%	Sept., 1973	Sept., 1973	Sept., 1973	Sept., 1973

the school year. The class entering in 1973 took the four measures of this study as part of a battery which included more than 20 tests in all. The relatively low percentage of complete response sets--58 of 90 (64%)--indicates a situation in which many subjects' responses could not be included due to the absence of one of the four scales needed as data points for this analysis. Comparison of elicited comments as well as equivalence of scale means indicated no response bias among the data sets accepted for analysis.

Fifteen members of each class of students were randomly selected as a reliability sample and were readministered the MARS in April 1974. These 30 students were each offered $2.00 for their cooperation in retaking the MARS. All 30 responded to the personal request, and many indicated the money unnecessary. Of the 30 responses, 22 students had correctly completed the MARS in the original testing administration and allowed for computation of reliability correlations.

Instruments

MARS--Development

A necessary process to be completed in the design of this research was the preparation of the Medical Attribution of Responsibility Scale (MARS). The development of that instrument followed the paradigm established by Shaw and Sulzer (1964). The incidents to be described

in the stories were drawn from several sources including: a critical incident survey of medical subgroups for examples of responsible behavior by student physicians (Loftus, 1970); the clerkship evaluations of medical students as performed by community physicians acting as faculty; solicitation of incidents from medical school faculty and students; observation of events within the Colleges of Medicine at Michigan State.

The compiled inventory of incidents was then organized into stories which varied the levels of the outcome variables discussed in the Statement of the Problem--Quality, Intensity, and Association. The stories were then submitted to various medical personnel who rejected those stories whose material was not appropriate for first-year medical students, whose material contained rare or unrealistic situations, or whose material was internally inconsistent. The stories which remained demonstrated satisfactory realism and congruence with common experience in medical training. Each story contained one condition of Quality, Good or Bad, and one condition of Intensity, Mild or Severe. In order to reduce the total number of stories which participants would be asked to read, some stories were written to contain two actors with different degrees of Association with an identified outcome. Hence, some stories contained two conditions of the Association

variable: an Ambiguous association for one actor and the outcome and a Direct association for another actor and the same outcome. In all, 16 stories were selected which completely crossed the design variables as shown in Table 3-4.

In addition to the stories selected for outcomes, eight more stories were selected in which the outcome was not specific. In these stories, the actor's behavior demonstrates different degrees of congruence with certain values or norms to which this medical school has claimed commitments. Some of these stories involve the competition between responses as was mentioned in the discussion on responsibility and evaluation in the introduction.

The administered scale consisted of 24 situational descriptions to which the subject is asked to respond by answering 39 questions about the attribution of responsibility in those situations. The response scale runs from (1) not at all responsible to (10) completely responsible. The scoring of the MARS yields sums for each category of outcome variation as shown in Table 3-4. It also provides sum scores for several other factors. Causal is defined by the sum of scores on items 1 to 29 inclusive in which a specific outcome is presented. Items 30-39 define the Normative score, reflecting situations in which a more general example

of a type of behavior is performed, and no specific outcome is provided. Items can also be sorted to provide scores for Student a sum of all items where the actor is a medical student or Other in which the actor is a faculty or resident, nurse, or patient.

MARS--Reliability and Construct Validity

Following the paradigm of Shaw and Sulzer (1967) in their development of previous measures of attribution of responsibility, the construct validity of the MARS can be assessed through an examination of the adequacy with which the test materials evoke the perception of relevant variables and their intended conditions. Such an examination was undertaken by presenting the MARS stories to a group of medical students and faculty who were asked to rate each of the outcome variables in each story. After reading a story, instead of responding with a simple attribution of responsibility, these validity sample respondents answered several questions. How intense is the outcome of this story, Mild or Severe? Is the quality of the outcome in this story Good or Bad? Is the actor Directly or Ambiguously associated with the outcome? Table 3-2 gives a comparison of the intended manipulation of the variables and their perception by respondents. The validity of the MARS can also be inferred from the pattern of

Table 3-2

Perception of MARS Outcomes

Item #	Quality		Intensity		Association	
1	Bad	76%	Mild	87%	Ambiguous	66%
2	Bad	76%	Mild	87%	Direct	54%
3	Good	100%	Mild	73%	Direct	98%
4	Bad	91%	Severe*	89%	Direct*	76%
5	Bad	91%	Severe	89%	Direct	75%
6	Bad	98%	Mild	62%	Ambiguous	62%
7	Bad	98%	Mild	62%	Ambiguous	53%
8	Bad	98%	Mild	62%	Direct	67%
9	Good	98%	Severe	65%	Direct*	80%
10	Good	98%	Severe	65%	Direct	100%
11	Bad	93%	Severe	96%	Direct*	82%
12	Bad	93%	Severe	96%	Direct	76%
13	Good	89%	Mild	80%	Direct	69%
14	Good	89%	Mild	80%	Direct*	84%
15	Good	98%	Mild	64%	Direct	62%
16	Good	98%	Mild	64%	Direct	80%
17	Good	96%	Mild	76%	Ambiguous	65%
18	Good	96%	Mild	76%	Direct	84%
19	Bad	51%	Mild	70%	Direct	58%
20	Good	98%	Severe	70%	Direct	100%
21	Good	100%	Severe	64%	Direct	93%
22	Good	100%	Severe	64%	Direct*	78%
23	Good	100%	Mild	76%	Direct	78%
24	Good	100%	Mild	76%	Direct	80%
25	Bad	98%	Severe	98%	Direct	80%
26	Bad	93%	Mild	82%	Direct*	89%
27	Bad	93%	Mild	82%	Ambiguous*	78%
28	Bad	100%	Severe	87%	Ambiguous	71%
29	Bad	100%	Severe	87%	Direct	93%
30-39	Normative					

Note.--Causal attributions are made in items 1-29; Normative attributions are made in items 30-39; Attributions to Students are made in items 1, 3, 4, 6, 7, 9, 11, 13, 15, 17, 19, 20, 21, 23, 25, 26, 28; Attributions to Other medical personnel are made in items 2, 5, 8, 10, 12, 14, 16, 18, 22, 24, 27, 29.

*For these items, a majority of respondents designated the condition other than the intended manipulation.

results obtained and the relationships it shows among the variables of the research study.

The reliability of the MARS can be estimated by computing the test-retest correlations between scores of subjects who have taken the test on two separate occasions. The whole class of medical students entering in 1972 was administered the MARS in May 1973. A randomly selected group of 15 students was readministered the same measure in April 1974, 11 months later. Of the 13 students who took the MARS on both occasions, the average test-retest correlation was 0.69. For the eight members of the class of 1973 who took the test in September 1973 and again in April 1974, six months apart, the average test-retest correlation was 0.76.

The agreement between intended manipulation of the variables and the perceptions of the respondents in the validity sample, and the reliability scores reported above, were accepted as indicative that this form of the MARS was adequate for an exploration of the questions identified in Chapters I and II of this paper. Further, the obtained results on construct validity suggest that the variable of degree of Association is more susceptible to individual differences than are the variables of Quality or Intensity of outcome. It was also recalled from the previous discussion of other research that the degree of Association was the most perceptually

sophisticated and developmentally difficult judgment to make. These issues will be recalled in the discussion of results. Another output of the validity study which was of interest was the observation that many respondents indicated that the use of the term Severe to describe Good outcomes was dissonant. A limit to the adequacy of the study of validity also emerged in debriefing anecdotes in which some respondents indicated that in that form of the measure the specific outcome was not always sufficiently clear. (A copy of the MARS instrument as validity questionnaire is included in Appendix C.)

Interpersonal Check List

The Interpersonal Check List (ICL) devised by LaForge and Suczek (1955) is a self-administered adjective check list on which the respondent indicates which items he/she feels accurately describe characteristics for a given target person. In this study respondents were asked to describe themselves. Summary scores of Dom and Lov are assumed to express an ICL profile in terms of two underlying orthogonal dimensions, as was discussed in Chapter II. Computation of Dom and Lov is based upon sum scores for the 16 subscales. Those subscales are described below in terms of words which describe the lowest and highest end of each scale:

Subscale A - Able to give orders . . . . . Dictatorial

Subscale B - Self-respecting . . Egotistical and Conceited

Subscale C - Able to take care of Self . . . . Cold and Unfeeling

Subscale D - Can be strict if necessary. . . . Cruel and Unkind

Subscale E - Can be frank and honest. . . . Hard-hearted

Subscale F - Can complain if necessary . . Rebels against everything

Subscale G - Able to doubt others . . . Distrusts everybody

Subscale H - Able to criticize self . . . Alwasy ashamed of self

Subscale I - Can be obedient . . . . . Spineless

Subscale J - Grateful . . . . . Clinging vine

Subscale K - Appreciative. . . . . Will believe anyone

Subscale L - Cooperative . . . . . Agrees with everyone

Subscale M - Friendly . . . . . Loves everyone

Subscale N - Considerate . . . Tries to comfort everyone

Subscale O - Helpful . . . . Spoils people with kindness

Subscale P - Well thought of . . . . Expects everyone to admire him

Subscale scores can range from 0 - 20. Test score reliabilities are reported as ranging between 0.64 and 0.77 (Lange, 1970; LaForge, 1973). The validity of the ICL has been demonstrated through the relationships among ICL scores and MMPI scales as well as between ICL scores and various situational behaviors.

Attitude Toward Leadership Scale

The Attitude Toward Leadership scale (ATL) is an instrument developed by Dr. Henry Clay Smith of the Psychology Department at Michigan State University. It is a 32-item forced choice inventory which requires the respondent to choose which of the two identified behaviors is more desirable in a good leader. The descriptions included in the scale are derived from Fleishman's typology of supervisory behaviors. The ATL form can be used either for self-report or to evaluate another leader. Research evidence suggests that higher scores on two defined subscales are associated with more effective leadership.

The 32 items are broken into two subscales. The first 16 items define a respondent's position on a scale of Consideration. Consideration refers to a dimension including the priority assigned to personal needs of workers as opposed to the priority assigned to task demands. The scale is scored by summing the number of items in which the choice emphasizing the personal needs is selected by the respondent. The second 16 items define a respondent's position on a scale labelled Responsibility. Responsibility refers to the degree of differentiation made between the roles of leader and worker. The scale is scored by summing the number of items in which the respondent selects the item stressing the role of leader.

Phrases describing a leader are given below in terms of the two constructs Consideration and Responsibility and their two poles:

Low Consideration

A leader who treats his workers without considering their feelings.
A leader who refuses to explain his actions.
A leader who acts without consulting his workers first.

High Consideration

A leader who puts suggestions from workers into action.
A leader who is willing to make changes.
A leader who makes workers feel at ease while talking to him.

Low Responsibility

A leader who lets students do their work in any way they think best.
A leader who does not criticize poor work.
A leader who does not emphasize quantity of work.

High Responsibility

A leader who insists upon quality.
A leader who decides in detail what shall be done and how.
A leader who spends his time in planning the work.

The two scales of Consideration and Responsibility have been shown to have internal consistencies above 0.80 and a slight but negative correlation (Smith, 1968) $r = -0.30$. For the sample of this study, the correlation between the two scales was observed to be $r = -0.36$.

International Opinion Survey

Based upon Rotter's social learning theory model, and derived from his original Locus of Control Scale, the International Opinion Survey attempts to improve the measurement of a person's belief in external versus internal control, i.e. whether fate, luck, or external factors determine success or failure (an external focus) or whether the capabilities of the individual are the primary determinants of success or failure (an internal focus). Unlike the original Locus of Control scale developed by Rotter, the IOS form breaks down the Locus of Control variable into six content-related categories which reflect the loadings identified in several factor analytic studies of the original scale forms. The IOS also includes a seventh scale which is derived from another of Rotter's earlier tests and designed to measure a person's interpersonal trust, defined as the degree to which a person believes that his relationships with others have predictability and consistency that allow him to share responsibility and control of situations with others.

The seven subscales of the IOS are characterized below:

1. General luck or fate, e.g. many of the unhappy things in people's lives are partly due to bad luck.

2. Politics, e.g. one of the major reasons why we have wars is because people don't take enough interest in politics.

3. Respect, e.g. no matter how hard you try, some people just don't like you.

4. Academics, e.g. many times exam questions tend to be so unrelated to course work that studying is really useless.

5. Leadership success, e.g. capable people who fail to become leaders have not taken advantage of their opportunities.

6. Miscellaneous, e.g. statements which could be included in two or more of the above categories.

7. Trust, e.g. most people can be counted on to do what they say they will do.

The IOS consists of 59 statements which the respondent can answer Agree, Disagree, or Can't Decide. The scoring for the various subscales is indicated on the following page, Table 3.3.

Test-retest reliabilities for the original 23-item forced choice format of the I.E. or Locus of Control scale ranged from 0.49 to 0.83 after a two-month time lapse. Discriminant validity in terms of low correlations with such variables as intelligence, social desirability, and political affiliation was established through several

Table 3-3

Scoring Key for the International Opinion Survey

Subscales						
Trust	Respect	Luck/ Fate	Miscel- laneous	Politics	Academic	Leader- ship
2*	3*	4*	5*	7*	8	9*
6*	13*	14	15*	17*	18*	19*
10*	23*	24	25	27*	28*	29*
12*	33	34	35*	37*	38	39
16	43*	44	45	47	48*	49*
20*	53*	54	55	57*	58	59*
22						
26						
30*						
32						
36*						
40						
42						
46*						
50						
52						
56*						

Note.--All entries are item numbers.

*These items are revised scored : 1, 2, 3 as they appear on the answer sheet should be scored 3, 2, 1.

studies (Rotter, 1966). Predictive validity for the Locus of Control scale in a forced choice format has been good across a wide range of experimental contexts. That is, populations theoretically expected to be higher or lower on scale scores have been demonstrated to achieve those scores.

The Agree-Disagree format of the International Opinion Survey (IOS) has been shown to be an adequate measure of the Locus of Control construct through its intercorrelations with the various Locus of Control scales. With the forced choice format of Locus of Control, the IOS showed correlations of 0.53 to 0.79 after a six-week time lapse. This is within the same test range as the test-retest reliability shown by the forced choice form itself. The predictive validity of the IOS has also been established by demonstrating that the populations score in the expected directions.

Design of the Study

This study is comprised of sections which will be subjected to separate statistical analyses. In character, the study may be said to be replicative, exploratory, descriptive, and correlative. The effects of outcome variables are expected to replicate the results reported by previous research. The extension of those results to the context of medical education and the development of a measure of attribution of

responsibility appropriate to the field of medicine is an exploratory venture. It represents a logical extension of previous research efforts but needs to elicit verification of the adequacy of its application to a new field. The real and practical implications are involved in the description of the elements of the behavior which is defined as the attribution of responsibility. Medical education is an appropriate instance in which such a behavior has pragmatic importance. The basis for an empirical description is found in correlations established among the various measures under study. In this study the effort is to verify what is known about the attribution of responsibility; to validate those effects in medical judgments; to develop and apply measures appropriate to further study of attribution of responsibility in medicine; and to examine relations among attribution of responsibility and several personality measures including two prepotent dimensions of interpersonal behavior which define a nomologic net.

A visual presentation of the examination of outcome variables, Locus of Control, and Academic Level is made in Table 3-4. That table also shows which items on the MARS are associated with different conditions of outcome variables. It also includes the categories of IOS Locus of Control to be examined and the contrast between Faculty and Student or Academic Level.

Table 3-4

MARS Items Assigned to Variable Conditions

Good				Bad			
Mild		Severe		Mild		Severe	
Direct	Ambiguous	Direct	Ambiguous	Direct	Ambiguous	Direct	Ambiguous
3	14	10	9	2	1	5	11
13	17	20	22	8	4	12	28
15		21		19	6	25	
16				27	7	29	
18					26		
23							
24							

Statement of the Hypotheses

Hypothesis 1:

Attribution scores are equal for Good and Bad story outcomes; there is no Quality effect. (predicted direction Bad > Good)

Hypothesis 2:

Attribution scores are equal for Mild and Severe story outcomes; there is no Intensity effect. (predicted direction Severe > Mild)

Hypothesis 3:

Attribution scores for stories with Direct association between actor and outcome are equal to scores for stories with Ambiguous association between actor and outcome; there is no effect for Association. (predicted direction Direct > Ambiguous)

Hypothesis 4:

Attribution scores are equal across all conditions, or differ only by functions assignable to a design variable; there are no interactions. (predicted-interactions)

Hypothesis 5:

Attribution scores for Causal and Normative items are equal. (predicted Normative > Causal)

Hypothesis 6:

The mean scores attributed to Student actors are equal to the mean scores attributed to actors from Other roles, i.e. faculty, residents, nurses, patients. (predicted Other > Student)

Hypothesis 7:

The Academic Level variable defined by Faculty and Medical Students groupings shows no difference between group means. (predicted Faculty > Students)

Hypothesis 8:

Attribution scores are equal for respondents grouped on the IOS into Internal, Middle and External on the Locus of Control variable. (predicted Internals > Middles > Externals)

Hypothesis 9:

There are no correlations among the scores on the MARS, ATL, ICL, AND IOS; no regression coefficients will emerge to define an equation. (predicted Dom and Responsibility, Lov and Consideration, a regression equation will be defined)

Analysis of the Data

Analysis of the data proceeds through several steps. The first step deals with the effects of outcome variables on the attribution of responsibility as measured on the MARS. Quality, Good-Bad, Intensity, Mild-Severe, and degree of Association Direct-Ambiguous are each examined through Analysis of Variance as computed on the design presented in Table 3-4. Also tested in that design is the contribution to the variance accounted for by the Locus of Control measured by the IOS. A separate analysis will allow for a test of the Academic Level variable. Separate ANOVAs will also be computed to examine the Causal-Normative comparison, and the attribution to Student-Other Roles.

Later steps will attempt to describe the relationships among scores on the other measures of personality function. In specific, a multiple regression analysis will attempt to correlate each respondent's scores in such a way as to provide an equation which can be used to predict the attribution of responsibility. That equation will include scores derived from the MARS, IOS, ICL, and ATL.

Analyses will be performed at the computer laboratory of Michigan State University on the CDC 6500 using the Bastat and Finn programs.

Summary

This chapter presented the details of the study regarding sample, instruments, design analyses, and hypotheses. The sample is described as faculty and students from the College of Human Medicine at Michigan State University. They were administered several measures as part of a project authorized by the College. The instruments they took during 1973 and 1974 included the Interpersonal Check List (ICL), The Attitude Toward Leadership scale (ATL), a new form of the Locus of Control measure called the International Opinion Survey (IOS), and an instrument whose development is part of this study, the Medical Attribution of Responsibility Scale (MARS).

The study is designed and described as replicating earlier research findings, extending them to the context of medicine, and developing and validating a new instrument to further explore the attribution of responsibility. Correlations are sought with other personality measures including the ICL, ATL on which a predictive effort will be based. Hypotheses are enumerated in the null form for test by Analysis of Variance and multiple regression analysis.

CHAPTER IV

RESULTS

Effects of Story Variables

The Medical Attribution of Responsibility Scale (MARS) is a measure which describes common events occurring within the context of medical education and asks the respondent to assign a rating of responsibility to actors in the story presented. There are 39 items which request an attribution on a scale from 1-10, with 1 being identified as not at all responsible and 10 being designated completely or exceptionally responsible. These attribution scores can be summed across different controlled levels of outcome variables. The outcome variables examined in this study included Quality, Intensity, and Association.

There are two types of stories included in the MARS. One defines a situation in which the respondent is asked to make a judgment of Causal ascription--how responsible is this particular actor for this specific outcome. The second type of story asks the respondent to make a Normative judgment of responsibility--how

responsible is this kind of action or this level of performance. A summary score is computed for each of these types of stories.

Each story includes several persons, and the agent of the action may be seen to be either a medical Student or some Other medical personnel such as a faculty member, resident, nurse, or patient, although most other actors are faculty members. Two scores can be computed which reflect these categories of Student or Other. These scores reflect attribution to that academic level or Role of the actor and thus allow comparison of the average attribution to the different role categories.

The results of comparisons of these forms will now be presented in the form of statistical tests of the null hypothesis. Analyses of variance were performed using the Finn program on the Michigan State University CDC 6500 computer. The design for the first analysis is given in Table 4-1 with the results presented in Table 4-2.

Hypothesis 1:

Attribution scores are equal for Good and Bad story outcomes; there is no Quality effect. (predicted Bad > Good)

Results:

The hypothesis is rejected.

Table 4-1

Mean Scores for Attribution of Responsibility by Outcome Variables, Academic Level, and Locus of Control

Academic Level	Locus of Control	MARS Story Variables							
		Good				Bad			
		Mild		Severe		Mild		Severe	
		Direct	Ambiguous	Direct	Ambiguous	Direct	Ambiguous	Direct	Ambiguous
Student	Internal N = 22	6.50	5.15	7.61	5.59	4.97	5.02	7.27	5.55
	Middle N = 87	6.51	5.29	7.46	5.94	4.65	5.01	7.66	5.42
	External N = 21	6.97	5.86	7.73	6.02	4.85	5.13	7.98	6.19
	Group Mean	6.58	5.36	7.53	5.89	4.73	5.08	7.65	5.56
Faculty	Internal N = 6	6.14	5.17	6.55	5.25	4.89	5.00	7.05	4.58
	Middle N = 21	6.48	5.27	7.41	6.21	4.60	5.07	7.40	4.29
	External N = 7	6.93	6.33	7.62	6.29	5.83	4.39	8.14	4.00
	Group Mean	6.51	5.47	7.30	6.06	4.90	4.92	7.49	4.28
	Grand Mean	6.545	5.415	7.415	5.975	4.815	5.00	7.57	4.92

Table 4-2

Results of the ANOVA of Outcome, Academic Level, and Locus of Control Variables

Sources of Variance		Degree of Freedom	Mean Sq.	F	p <
Academic Level (Faculty vs. Student)	*(AL)	1	8.37*	2.07	
Locus of Control (Internal, Middle, External)	(LC)	1	12.96	3.21	.04
Academic Level with Locus of Control	(ALxLC)	1	.75	.81	
Respondents within interaction of Academic Level and Locus of Control	(R: ALxLC)	158	4.04		
Quality (Good vs. Bad)	(Q)	1	141.07	82.67	.0001
Intensity (Mild vs. Severe)	(I)	1	426.04	452.92	.0001
Association (Ambiguous vs. Direct)	(Ass)	1	468.49	291.01	.0001
Quality X Intensity	(QxI)	1	54.59	56.60	.0001
Quality x Association	(QxAss)	1	10.27	6.21	.0138
Intensity x Association	(IxAss)	1	180.54	129.38	.0001
	(QxIxAss)	1	101.82	59.68	.0001
	ALxQ	1	6.83	4.00	.05
	ALxI	1	8.11	8.62	.004
	ALxAss	1	2.61	1.62	
	LCxQ	1	1.09	.64	
	LCxI	1	.89	.94	
	LCxAss	1	.32	.20	
	ALxQxI	1	6.08	6.31	.01
	ALxQxAss	1	14.03	8.48	.004
	ALxIxAss	1	1.14	.83	
	LCxQxI	1	3.03	3.14	.04
	LCxQxAss	1	1.21	.73	
	LCxIxAss	1	.49	.35	
	ALxQxIxAss	1	3.38	1.98	
	LCxQxIxAss	1	3.23	1.89	
	ALxLCxQ	1	1.38	.81	
	ALxLCxI	1	.69	.73	
	ALxLCxAss	1	2.38	1.48	
	ALxLCxQxI	1	.72	.74	
	ALxLCxQxAss	1	3.60	2.18	
	ALxLCxIxAss	1	.01	.01	
	ALxLCxIxQxAss	1	.14	.08	
Quality x Respondents: within ALxLC	QxR: ALxLC	158	1.71		
	IxR: ALxLC	158	.94		
	AssxR: ALxLC	158	1.61		
	QxIxR: ALxLC	158	.96		
	QxAssxR: ALxLC	158	1.65		
	IxAssxR: ALxLC	158	1.40		
	QxIxAssxR: ALxLC	158	1.71		

*This F score was recomputed on revised format by FINN Program.

The grand mean score for stories with a Good outcome was 6.34 on a scale of 10. The grand mean score for stories with a Bad outcome was 5.58. Figure 4-1 shows that stories with a Good outcome resulted in greater attribution of responsibility scores in three of the four design conditions. In the Analysis of Variance (ANOVA) which was computed to test the statistical significance of this Quality of outcome effect, the obtained result was an F statistic of 82.67 with 1 and 158 degrees of freedom; significant beyond the 0.0001 level.

Hypothesis 2:

Attribution scores are equal for Mild and Severe story outcomes; there is no Intensity effect. (predicted Severe > Mild)

Results:

The hypothesis is rejected.

Stories with a Severe outcome resulted in a grand mean of 6.47 on a scale from 1 to 10 indicating the amount of responsibility attributed. Mild outcomes resulted in a grand mean of 5.44. Figure 4-2 shows that stories with Severe outcomes resulted in greater attribution of responsibility in three of the four design conditions. The Intensity variable was observed to have a significant effect demonstrated in the ANOVA performed on these data. An F value was computed of 452.92.

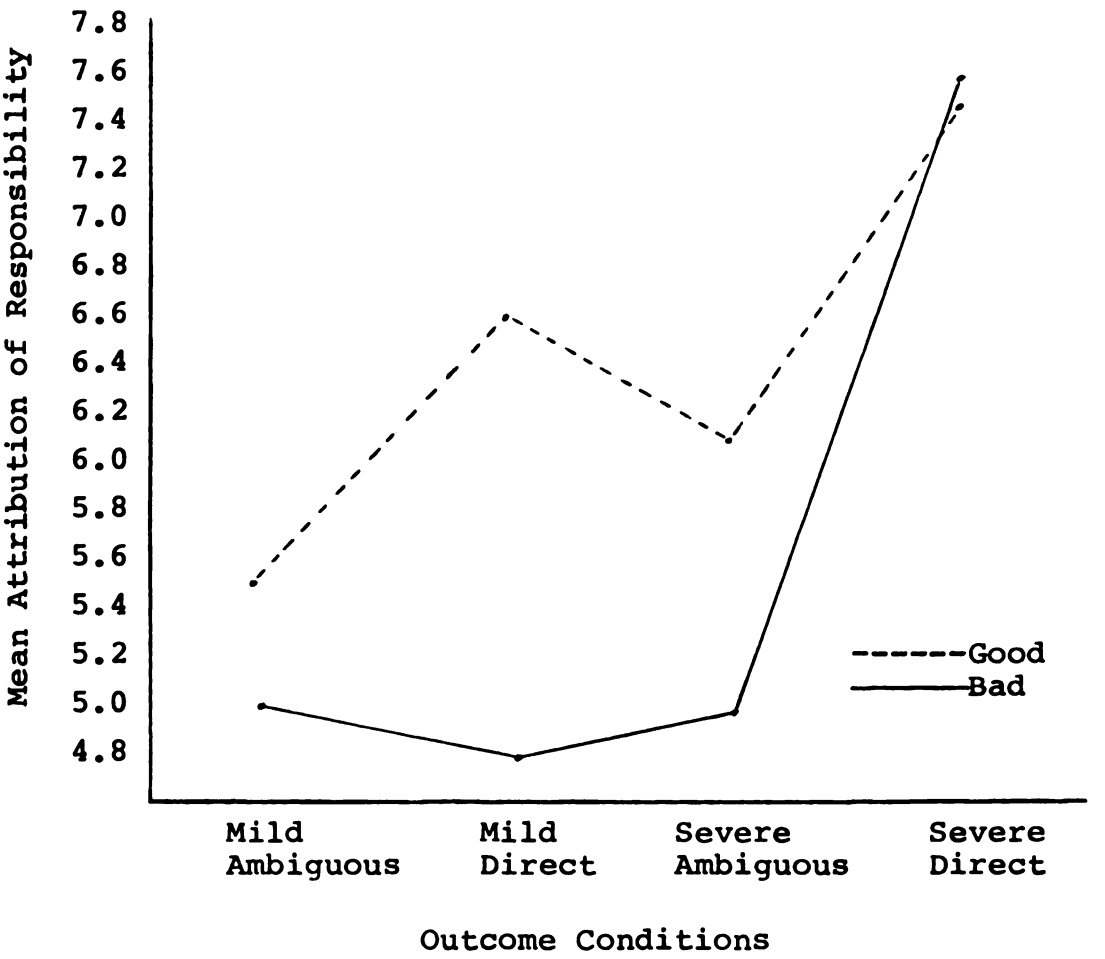


Fig. 4-1. Effect of Quality of outcome, Good-Bad, on Attribution of Responsibility Scores

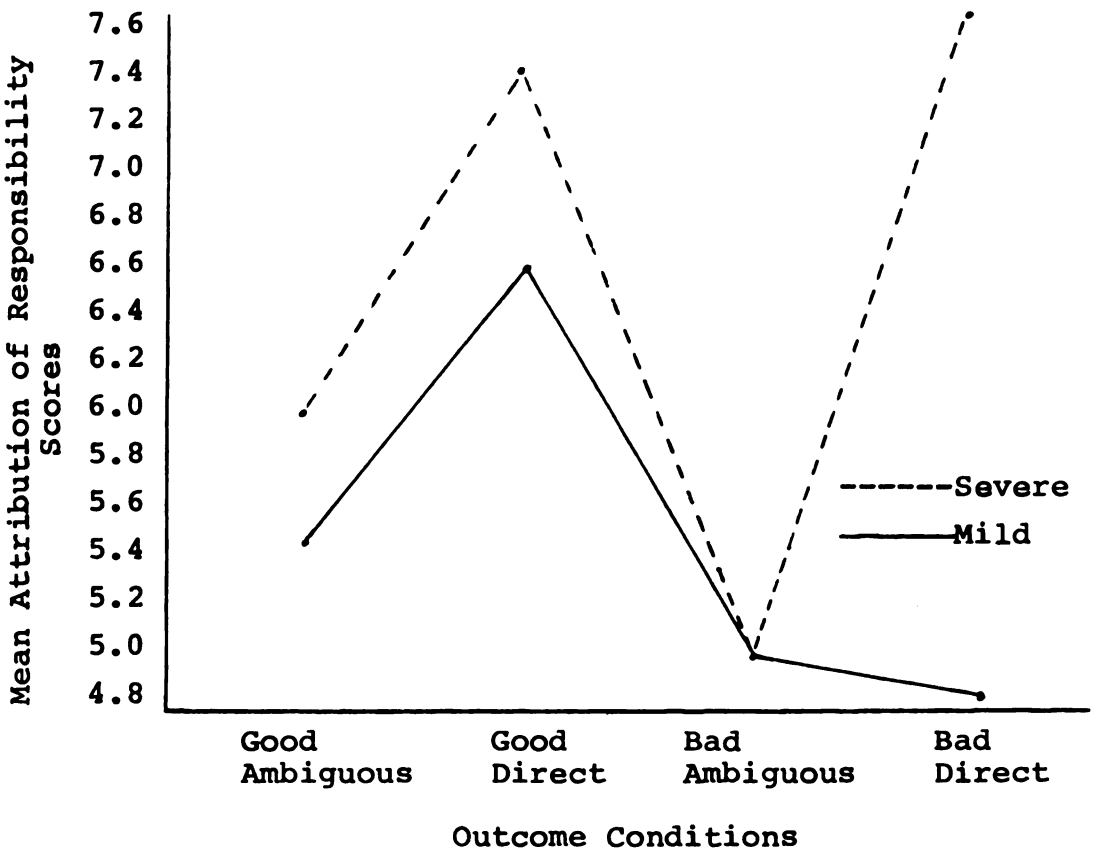


Fig. 4-2. Effect of Intensity of Outcome, Severe-Mild, on Attribution of Responsibility Scores

With 1 and 158 degrees of freedom, that value is significant beyond the 0.0001 level.

Hypothesis 3:

Attribution scores for stories with Direct association between actor and outcome are equal to scores for stories with Ambiguous association between actor and outcome; there is no Association effect. (predicted Direct > Ambiguous)

Results:

The hypothesis is rejected.

Stories with a Direct association between actor and outcome were observed to have a mean attribution score of 6.58 on the 1-10 scale. Ambiguous association was seen to produce a mean score of 5.33. Figure 4-3 indicates that the Direct association led to greater attribution in three of the four design conditions. The significance of the effect for Association was assessed through the ANOVA performed on the study data. That analysis produced an F of 291.01, with degrees of freedom equal to 1 and 158; significant beyond the 0.0001 level.

Hypothesis 4:

Attribution of Responsibility scores are equal across all design conditions or differ only by functions assignable to a design variable; there are no interactions. (predicted interactions)

Results:

The hypothesis is rejected.

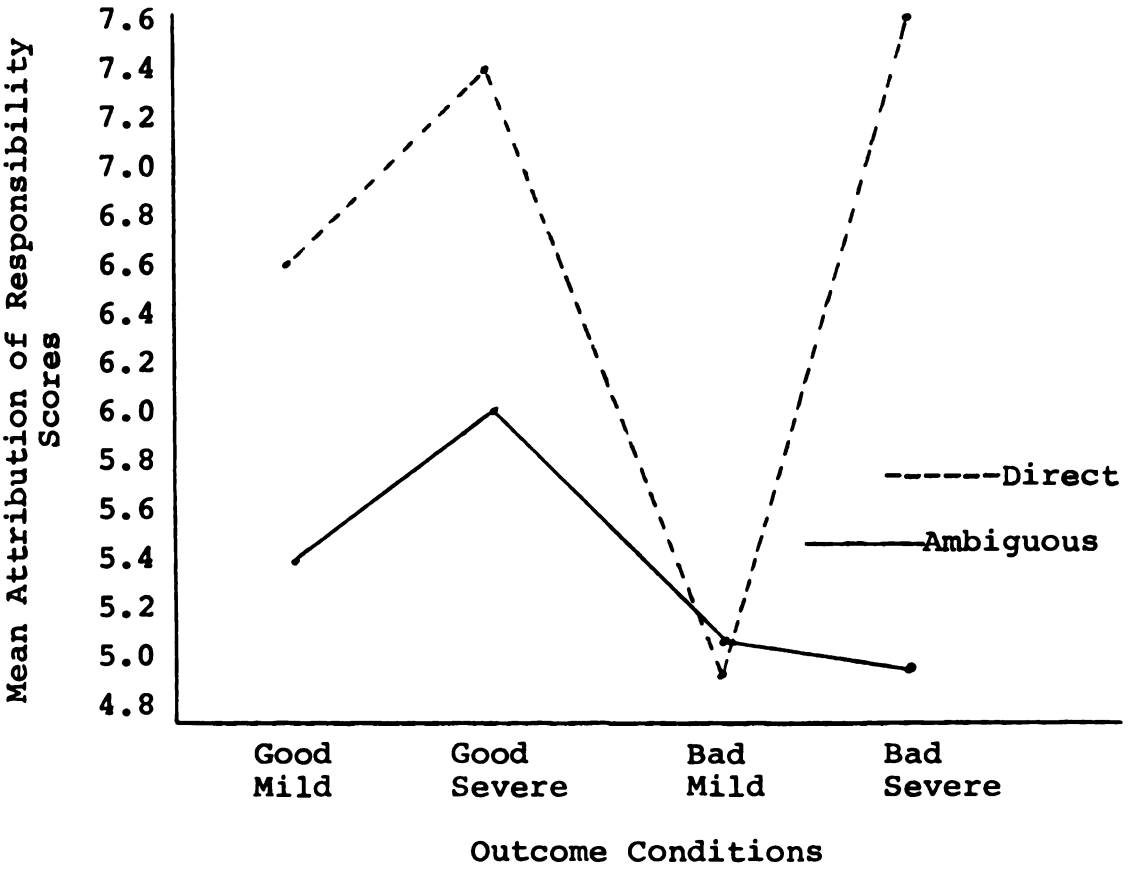


Fig. 4-3. Effect of Degree of Association, Direct--Ambiguous, on Attribution of Responsibility Scores

The analysis of variance performed on the story attribution scores obtained in this study revealed several significant interactions among story outcome variables. They are listed below in Table 4-3.

Table 4-3

Significant Interactions Among Story Outcome Variables

Variables	F	p <
Quality X Intensity	56.60	0.0001
Quality X Association	6.21	0.01
Intensity X Association	129.38	0.0001
Quality X Intensity X Association	59.68	0.0001

(1) Quality X Intensity.--Severe outcomes were observed to result in greater attribution than Mild outcomes. This effect is stronger when the outcome is Bad than when it is Good. Stated in another way, this interaction can be said to show that while Good story outcomes generally result in higher attribution of responsibility scores than Bad outcomes, this effect is stronger under conditions of Mild outcomes than when the outcome was Severe.

(2) Quality X Association.--Direct outcomes resulted in greater attribution than Ambiguous outcomes. This effect was seen to be slightly but significantly greater when the outcome was Good than when it was Bad.

Alternately, this can be restated in terms of the observation that Good stories resulted in greater attribution than Bad outcome stories, and this difference is slightly greater under conditions of Direct association between actor and outcome.

(3) Intensity X Association.--Direct outcomes received higher attribution scores than did Ambiguous outcomes, and this effect was greater when the outcome was Severe rather than Mild. Restated, Severe story outcomes result in even greater attribution scores than Mild in situations where the association between actor and outcome is Direct rather than Ambiguous.

(4) Quality X Intensity X Association.--The three-way interaction of outcome variables was such that in stories with Good outcomes the Direct association condition resulted in a larger difference between Severe and Mild outcomes than did the Ambiguous association. In stories with Bad outcomes, the Direct association includes the Severe greater than Mild effect; but in conditions of Ambiguous association and Bad outcomes there is an inversion of the Severe-Mild relationship. This three-way interaction can be said to uniquely demonstrate that the condition of a story outcome which is Bad shows a compromise of the previously observed relation between Intensity and Association.

Hypothesis 5:

Attribution score means for Causal and Normative are equal. (predicted Normative > Causal)

Results:

The hypothesis is rejected.

The mean score for attribution in stories which involved Normative judgments was 6.22. The mean attribution score for Causal judgments was 5.93. The Analysis of Variance design and results which appear below produced an F statistic of 14.24, with 1 and 152 degrees of freedom, which was significant at $p < 0.001$. That finding indicates that in this study the Normative judgments led to attribution of responsibility scores that were slightly but significantly greater than the attribution scores of Causal judgments.

Table 4-4

Design and Results of ANOVA Comparing Attribution of Responsibility in Causal Versus Normative Stories

Causal						
Norm-ative						
	Internal	Middle	External	Internal	Middle	External
	Medical Students			Faculty		
Source				F	p <	
Judgment Context Causal vs Normative				14.24	0.001	

Hypothesis 6:

The mean scores attributed to Student actors are equal to the mean scores attributed to actors from Other roles, i.e. faculty, residents, nurses, patients; there is no Role effect. (predicted Other > Student)

Results:

The hypothesis was rejected.

Attribution of responsibility to Students was observed to average 3.88 while attribution to actors in Other roles was found to average 8.75. This effect was found to be statistically significant and to be true for both faculty and medical student respondents. (A significant effect for Locus of Control was demonstrated in this ANOVA but will be discussed in a later section.) The design and results of the Analysis of Variance which was computed to examine the effects of Role are given in Table 4-5. That analysis produced a demonstration of a significant effect for differences in attribution to Student or Other. Role differences were associated with an F statistic of 3562.78, with 1 and 152 degrees of freedom; significant beyond the 0.0001 level.

Summary of Results for Story Variables

Each of the outcome variables designed into the MARS--Quality of outcome Good-Bad, Intensity of outcome Severe-Mild, and degree of Association between actor and outcome Direct-Ambiguous--was found to contribute

Table 4-5

Design and Results of ANOVA Comparing Attribution of Responsibility to Student Versus Other Role Categories

Student						
Other						
	Internal	Middle	External	Internal	Middle	External
	Medical Students			Faculty		

Sources	df	Mean Squares	F	p <
Academic Level (A L)	1	.35	.32	-
Locus of Control (LofC)	1	4.81	4.43	0.01
(A L) X (LofC)	1	.36	.33	-
Respondents : (A L) X (LofC)	152	1.09		
Role-Student vs Other	1	1883.40	3562.78	0.0001
(A L) X Role	1	.08	.15	-
(LofC) X Role	1	1.45	2.74	-
(A L) X (LofC) X Role	1	.22	.41	-
Role X Respondents : (A L) X (LofC)	152	.53		

significantly to the amount of attribution of responsibility, statistically demonstrated beyond the 0.0001 level. Each of the two-way interactions was also significant. Quality X Intensity and Association X Intensity interactions achieved levels of $p < .0001$. The Quality X Intensity interaction showed a $p < .01$ confidence level. The three-way interaction, Quality X Intensity X Association was significant at $p < .0001$.

The Quality effect revealed that Good stories resulted in greater attribution scores than stories with Bad outcomes. The nature of the Intensity effect was that Severe outcomes resulted in greater attribution of responsibility than did Mild outcomes. The Association effect was such that Direct association between actor and outcome resulted in higher attribution scores than were seen in conditions of Ambiguous association between actor and outcome.

The interactions generally reflected a different strength for the main effect under the two conditions of the interacting variable. For instance, The Good greater than Bad effect was larger in Mild conditions than Severe ones. The Good greater than Bad effect was slightly larger in Direct conditions compared to Ambiguous ones. The Severe over Mild effect was also larger in Direct conditions compared to Ambiguous ones.

The three-way interaction showed some compromise of the relation between Intensity and Association under conditions of Bad outcomes compared to Good outcomes.

Responsibility attribution under the context of Normative judgments was seen to be significantly higher than attribution in Causal judgments; $p < .001$. Attribution to Student actors was observed to average much less than attribution to Other actors, creating a significant effect for Role; $p < .0001$.

Respondent Characteristics

The attribution of responsibility can be considered to be a behavior on the part of the respondent to the MARS which reflects his/her perception of the events and relations portrayed by the story items. Such behavior may well reflect different characteristics of the respondent as they influence the perceptions or choices involved. Such a characteristic, for instance, could be the amount of previous experience with, or maturation of attitudes toward, the circumstances described in the different stories. In order to examine that possibility, this study included a comparison of the responses made by faculty respondents versus those made by medical student respondents. This faculty-student dimension was labelled Academic Level.

Another factor which has been previously demonstrated to influence the pattern of attribution to

another person is a type of self-perception which has been identified as perceived Locus of Control. In this study, the relation between attribution of responsibility to another and opinions about one's own control over events was measured by the relation between scores on the MARS and the International Opinion Survey. Three groups were formed by scores on the IOS, defined as being Internal, Middle, or External on the Locus of Control variable. Internals were defined as those more than one standard deviation above the mean, a score of 46 or greater. Middles ranged from 35-45, which represented the mean ± one standard deviation. Externals were defined by a score of 34 or less which was more than one standard deviation below the mean.

On the assumption that certain prepotent dimensions define a nomologic space for interpersonal characteristics, this study sought to examine the position of the respondents of this study within that space and to assess the potential for predicting attribution behaviors on the basis of those dimensions. The Dom and Lov subscales from the Interpersonal Check List (ICL) were used as a measure of the prepotent dimensions. Another set of orthogonal factors which was thought to have value in assessing attribution behavior was the Consideration and Responsibility subscales of the Attitude Toward Leadership scale (ATL). A sensitive

measure of association between these several measures is possible through a multiple regression analysis. Such an analysis also prepares for the prediction of attribution in the form of MARS scores by means of a multiple regression equation which indicates the relative weighting of the various subscales.

Hypothesis 7:

The Academic Level of respondents, defined by Faculty and Medical Student groupings, shows no difference between group means. (predicted Faculty > Medical Students)

Results:

The null hypothesis was not rejected. No significant effect was observed for Academic Level.

The average attribution score for Student respondents across all situations was 6.0, while the overall Faculty average was 5.95. This similarity resulted in the absence of any Academic Level effect in the ANOVA. Academic Level did, however, show significant interactions in the main ANOVA (Table 4-1). Those interactions were with the outcome variables of Quality, Good-Bad, and Intensity, Severe-Mild. Academic Level also interacted with the interactions between outcome variables: Quality X Intensity and Quality X Association. Those relations are identified in Table 4-6.

Table 4-6

Significant Interactions Between Academic Level of Respondents and Story Outcome Variables

Variables	F	p <
Academic Level X Quality	4.00	0.05
Academic Level X Intensity	8.11	0.01
Academic Level X (Quality X Intensity)	6.08	0.01
Academic Level X (Quality X Association)	8.48	0.01

The nature of the interactions between Academic Level and the outcome variables involves the different strength of the outcome effects in the two groups. For instance, Students attributed more than Faculty in stories with a Bad outcome to explain the Academic Level X Quality interaction. The Academic Level X Intensity interaction was a function of Students attributing more than Faculty when the outcome was Severe. Academic Level X (Quality X Intensity) was a summation of these effects. The interaction of Academic Level X (Quality X Association) reflected a pattern such that when an outcome was Bad, Faculty attributed much less responsibility than Students if the Association was Ambiguous. Direct association in Bad outcomes resulted in similar attribution by Faculty and Medical Students.

Summary of Academic Level Effects

Overall, Faculty and Medical Student respondents did not differ in their mean scores on attribution of responsibility. They did differ, however, in the strength of the outcome variable effects they exhibited. Students showed smaller differences for Good over Bad outcomes than did Faculty. Students also showed larger differences for Severe over Mild outcomes. Finally, Students showed more attribution than Faculty for Bad Ambiguous outcomes.

Hypothesis 8:

Attribution score means are equal for respondents grouped on the IOS into Internal, Middle, and External on the Locus of Control variable. (predicted Internals > Middles > Externals)

Results:

The hypothesis was rejected.

Differences in attribution of responsibility were observed among the categories of respondents classified as Internal, Middle, and External on the IOS. The obtained averages were Internals 6.37, Middles 5.97, Externals 5.87. The analysis of variance identified this as a significant effect. On the design given in Table 4-1, the F of 3.23 with 2 and 158 degrees of freedom was significant at the $p < .05$ level. (It was also

identified in the ANOVA on the design in Table 4-5; $F = 4.43$, df 1 & 152, $p < .01$).*

A significant interaction between Locus of Control variable and the interaction Quality X Intensity was also observed; $F = 3.14$, df 2 & 158, $p < .05$. The nature of the interaction appeared to involve the greater attribution of Externals in Bad, Mild outcomes. In that condition, alone, the average attribution score for Externals was higher than the Middles' while in other conditions the pattern held of Externals' averages being lowest, Middles higher, and Internals attributing the highest responsibility scores.

Hypothesis 9:

There are no correlations among the scores on the MARS, ATL, ICL, and IOS such that regression coefficients can be defined into a predictive equation. (prediction correlations will be seen between Dom and Responsibility of the ICL and ATL respectively as well as between Lov and Consideration of the same scales, a regression equation will be defined)

Results:

The hypothesis was not rejected.

In order to explore the relationships among these several variables and address the issue of theoretical similarity among subscales, a multiple

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*The significant difference reported in the ANOVA was tested by Scheffé's contrast comparisons which indicated that the difference must be interpreted across all three means rather than between any two means.

regression analysis was computed. Table 4-7 presents the values computed for regression coefficients and defines the multiple correlations to be not significant. The F test of the null hypothesis which presumed no association between the dependent and independent variables in the regression analysis was not significant, and the null hypothesis could not be rejected.

Table 4-7

Standardized Regression Coefficients for Predicting MARS Scores

Predictors	Dependent Variables	
	MARS - Causal	MARS - Normative
IOS total	0.28	0.19
Dom	0.16	0.06
Lov	0.14	0.25
Responsibility	0.05	-0.10
Consideration	0.12	0.01

The computed multiple correlation for predicting MARS - Causal scores was 0.31 which yielded an F of 1.42 which was not significant. The multiple r for predicting MARS - Normative was 0.24, F = 1.16, also not significant.

On the basis of a priori examination, certain of the subscales in this study were believed to represent different measurement approaches to similar constructs. As a consequence of this assumption, the correlations

between Dom on the ICL and Responsibility on the ATL, and between Lov on the ICL and Consideration on the ATL, were of special interest. The correlations obtained in this study did not achieve significance. The correlation between Dom and Responsibility was $r = 0.13$, and the correlation between Lov and Consideration was $r = 0.10$.

The statistical manipulations of data which are associated with a multiple regression analysis and the correlations which it computes require a reasonable adherance to certain assumptions about the distribution of the data. The data of this study were subjected to examination, and the descriptions of the distributions are given in Table 4-8. The lack of power to predict MARS scores from the personality measures is most probably due, in this study, to the overwhelming proportion of the variance in MARS scores which is accounted for by the variables within the stories.

A further caution in the interpretation of the observed correlations reflects that the respondents in this study report themselves to be much more loving and dominant than other populations. College males averaged Dom = 2.70, s.d. = 6.42, and for college females Dom = 0.44, s.d. = 7.84 while this study's respondents averaged Dom = 12.11, s.d. = 14.64. College males showed Lov = 0.69, s.d. = 7.36 while college females

Table 4-8

Distribution Statistics for Multiple Regression Variables

Variable		Minimum Value	Maximum Value	Mean	Standard Deviation	Skewness	Kurtosis
Causal		126.00	226.00	171.86	20.18	.28	2.71
Normative		33.00	81.00	62.16	8.67	.04	2.93
Student		41.00	95.00	66.28	10.62	.28	2.71
Other		69.00	135.00	105.58	13.37	-.24	2.95
Locus of Control or IOSTOT		25.00	62.00	40.69	6.35	.34	3.37
Dom.--	Faculty	-38.90	45.60	15.02	16.59	-1.15	5.23
	Student	-36.80	47.90	11.31	14.07	-0.56	3.84
Lov.--	Faculty	-49.30	58.60	14.89	24.53	-0.42	3.01
	Student	-29.30	62.60	15.32	18.28	-0.38	2.49
Consideration--	Faculty	6.00	16.00	12.09	2.79	-0.39	2.39
	Student	5.00	16.00	11.84	2.80	-0.52	2.57
Responsibility--	Faculty	4.00	15.00	10.91	2.82	-0.41	2.59
	Student	1.00	15.00	8.75	3.19	-0.24	2.43

averaged Lov = 2.82, s.d. = 9.63. The respondents in this study averaged Lov = 15.22, s.d. = 19.66. The medical students and faculty in this study also selected more considerate behaviors as ideal for leaders $\bar{X}$ = 11.90 compared to college students $\bar{X}$ = 9.00.

Summary of Respondent Characteristic Effects

The Academic Level of the respondent, Faculty versus Medical Student, did not produce a significant effect on attribution of responsibility. Academic Level did interact with certain outcome variable effects such that compared to Faculty, Medical Students showed less increase of Good scores over Bad but more increase of severe scores over Mild. Students also attributed more in Bad, Ambiguous conditions. Locus of Control showed a significant effect such that Externals attributed less responsibility than did Middles who in turn attributed less than Internals. This effect was modified in Bad-Mild outcomes where Externals attributed more responsibility than Middles. No significant regression coefficients were derived from subscales on the IOS, ICL, or ATL for predicting MARS scores.

CHAPTER V

DISCUSSION AND CONCLUSIONS

The research presented in this paper was designed to examine and clarify the way in which persons in the area of medical education attribute responsibility to other persons acting in the context of medicine. The first procedure of this investigation was the development of the Medical Attribution of Responsibility Scale (MARS) as an instrument for measuring attribution of responsibility within the medical context. The second procedure involved the use of the MARS to examine the effects of different variables upon responsibility attribution scores. Two major groups of variables were studied. Story variables were (1) the different conditions of outcome--Quality, Intensity, and Association; (2) type of story--Causal or Normative; and (3) role of the person acting in the story. Respondent variables included Academic Level--Faculty or Medical Student; Locus of Control category--Internal, Middle, External; and, personality scale scores of Lov and Dom from the ICL and Consideration and Responsibility from the ATL.

The details of the development of the MARS were presented in Chapter III on Method. The results of the data analysis obtained by examining respondents' answers to the MARS were presented in Chapter IV on Results. In this chapter, discussion will provide a synthesis of the MARS instrument's character and potential. Discussion will also present and interpret the pattern of results obtained in this research and compare it with previous research. Finally, a critique of this study will be provided offering possible improvements and suggestions for future research.

Part I

The MARS

Investigation of the attribution of responsibility has been carried out in several contexts. Shaw and Sulzer (1964) reported an early experiment which made an empirical test of the theories proposed by Heider (1958). In that research, Shaw and Sulzer utilized an instrument they developed which described stories about "common place events" in the lives of children or college students. Simply labelled the AR scale, that measure varied the outcome Quality, Intensity, and Levels of Association between actor and outcome. Other researchers have utilized the evaluative context of jury decisions in asking subjects

to make attributions of responsibility (Walster, Shaver, Phares). That research attempted to control the severity of outcome (Intensity) and degree of Association but commonly focused upon negative outcomes which followed from accidental happenings.

In accord with the realization that the situational context of the attribution of responsibility influences the judgments made, it was decided that a medical form of AR scale would be necessary to investigate attribution of responsibility in medicine. Following the format used by Shaw and Sulzer, the MARS was developed as a series of stories which described events reasonable to occur in the context of medical training. In order to observe the fullest set of relations among variables, the MARS included all three of the variables shown to be significant by previous research.

On the basis of a conceptualization of responsibility developed concommittantly with this research, another element was added to the MARS. This was the inclusion of stories which did not require simply an attribution based upon a specific outcome but rather demanded attribution of responsibility for behavior offered as typical of a norm. This represents an exploratory effort to investigate responsibility not only as a causal relationship but also as a value-directed relationship which defines certain behaviors as right, others wrong, and still others irrelevant.

The MARS represents a comprehensive measure of the known and expected components of the attribution of responsibility. As such, it appears to be unique to this point and offers a model for the development of other scales specific to other contexts of evaluation or judgment. It offers further interest as an instrument for comparing the responses of those within the role and context for which it is specific, i.e. medicine, with the responses made by other subjects who are not identified with that role. Significant differences are expected on the basis of previous research (Loftus, 1970), but their empirical character is unknown. Finally, the present MARS measure of the attribution of responsibility allows for the demonstration of the interactions among all the known variables which no previous research has done.

The manipulation of the outcome variables for the MARS was pre-tested and checked for validity. These exercises demonstrated that the Good-Bad dimension was well defined by the consensus. Examples tended to be phrased in terms of the patient's improvement or deterioration of his condition. Others focused on the attainment or failure of the student's learning. The Intensity variable of Mild-Severe was also widely agreed upon. Mild outcomes ranged from wasted time and emotional distress to slight changes in patient's

disease condition. Severe outcomes were expressed in terms of prolonged hospitalization, omission of proper care, or even death. The dimension which showed the greatest variance in consensus was the degree of Association between the actor and outcome. The manipulations of this dimension were couched in terms of intention, foresight, and effort as well as ability. In general, these manipulations were successful in inducing the proper perceptions from respondents as judged both by the debriefing comments and the results of the study consistently supporting other research.

Part II

The Data on Attribution of Responsibility

The following issues were demonstrated by the present research as contributing to the attribution of responsibility: The most important variable in determining the amount of attribution was the academic Role of the actor: Medical Students were given much lower scores on attributed responsibility, $\bar{X} = 3.88$ compared to Other medical personnel $\bar{X} = 8.75$. The second most important factor appeared to be the degree of Association between the person and the outcome, with Direct association producing greater attribution scores than Ambiguous association. The Quality of the outcome demonstrated a significant effect such that in this study Good outcomes

resulted in greater attribution than Bad outcomes. Intensity of outcome also contributed significantly such that Severe outcomes resulted in higher attribution scores than Mild ones. It was also observed that attribution of responsibility made to Normative behaviors was higher than attribution made to Causal behaviors. Finally, the Locus of Control category of the respondent showed a significant effect such that Externals attributed least responsibility, Middles slightly more, and Internal respondents attributed the highest average amounts of responsibility. In this study, ICL and ATL scale scores were not shown to correlate significantly with the amount of responsibility attributed by individual respondents.

In general, the above stated results are remarkably consistent with the predicted directional hypotheses. The coherence of these replications is well developed in the first chapters which document their presentation in previous research. A number of elements stand out as appropriate for further comment here. First, there is the directional effect of the Quality of outcome results such that in this study Good outcomes resulted in higher attribution of responsibility scores than did Bad outcomes. Second, the interaction between outcome severity and degree of association is here demonstrated to be consistent with the findings of Phares and Wilson

(1972) and lends further credence to their interpretation. Their report, however, dealt only with negative outcomes so that the extension of the Intensity X Association interaction represents a unique contribution of this study. Further, there has been no previous study which controlled all three factors of Quality, Intensity, and Association in order to demonstrate the three-way interaction among them which is reported here for the first time.

In addition to the above successful replications and extensions, this study examined for the first time the relation between attribution for a specific outcome and normative attribution of responsibility. The significant effect which showed normative stories to result in greater attribution should be provocative of further examination and will perhaps lead to an elaboration of the relation between the functions of causal efficacy and comparison to standards as was discussed in the beginning of this paper.

The failure to observe a significant main effect for the Academic Level variable is assumed to reflect the maturity of the respondents as well as a successful screening of MARS items for those appropriate to the level of first-year medical students. The failure to observe significant relations between subscales on the ICL and ATL appears to be due to the special distribution

of variance in this study sample which prevents an adequate test of the hypothesis. Future research may productively focus upon the elements identified as susceptible to individual differences in this study and relate the effects of different scores on the ATL and ICL to that data.

Quality of Outcome:
Good vs. Bad

Previous research by Shaw and Sulzer indicated that the stories they used led to higher attribution scores in situations with bad or negative outcomes compared with good outcomes. They interpreted this as an apparent tendency on the part of most people to be more willing to give blame than credit. In the discussion of their results, they compare adults who appear to take circumstances into account when giving credit but not when placing blame, with children who seem to reduce blame when the negative outcome is provoked.

However, the effect that Shaw and Sulzer described was not consistent over all the levels of association which they examined; and in particular, at the level of purposive commission where the actor was evaluated on an action and outcome which he intended, the negative or bad outcomes generally did not produce a significantly higher attribution than good outcomes. Likewise, in a different study (Garcia-Esteve & Shaw, 1968) the bad

greater than good effect was observed only in urban subjects while rural subjects attributed higher scores for good outcomes than for bad.

The results seen in this study argue for a reassessment of the function of Quality of outcome (good-bad) in terms of the contribution of the intention of the actor and of the context of judgment in general. The cognitive set of the respondent is clearly important in terms of what function he sees his judgment performing. In previous studies, the level of blame may be more significant since social action usually follows blame more closely than credit. Likewise, in the jury context, assignment of accountability and culpability are paramount concerns. The setting and character of this study offers an interesting contrast.

In the context of an educational evaluation, good and bad outcomes take on special significance. The good outcome is a signal of adequate performance and success in the training task. Bad outcomes on the other hand may signal either a simple need for further learning, or if the consequences are severely negative may require a high degree of accountability in order to reduce the chances of reoccurrence. Such a pattern fits the data of this study rather well. Bad mild outcomes are given small attributed responsibility scores. Good outcomes are given higher attributions in proportion to

their importance and in proportion to the directness of their association with the actor. Severe Bad outcomes show very different scores as a function of whether they are clearly associated with the actor's behavior. If the actor is directly associated with a severe bad outcome, then high attribution is observed in keeping with the need to control such outcomes and prevent reoccurrence. However, if a severely bad outcome is only ambiguously associated with the actor, then low attribution of responsibility is observed. The differential attribution to students versus other personnel supports the interpretation that it is the educational context of respondents' judgment which accounts for good outcomes getting higher average attribution than bad outcomes.

Another possible explanation of the different Quality (Good-Bad) effect seen in this study may be due to the context of medicine rather than the context of education. It may be that the tendency proposed by Shaw and Sulzer for most people to blame more readily than give credit is somehow reversed in certain situations which are defined as ones in which good is accomplished. Thus, subjects may find it easier to praise a doctor than blame him for mistakes. It has been observed that in certain high-risk tasks, negative results often bring less blame than they would in other contexts.

The Interaction Between Intensity and Association

Contradictory results were reported on the increase in amount of attributed responsibility with the increase in severity of outcome until Phares and Wilson (1972) demonstrated the interaction of increasing severity with the degree of association between actor and outcome. They reported, however, that under conditions of ambiguous structure they observed no increase in attribution with increase in severity. The present study replicates their findings for those stories which have negative outcomes. However, for the stories of this project which included good outcomes, increasing severity of outcome was seen to lead to increased attribution under both ambiguous and direct association. That three-way interaction was reported here for the first time.

Part III

Critique and Proposals

The importance of the judgment context to the attribution of responsibility has been clearly demonstrated by the current research. The issues of the respondent's relation to the actions in the story also emerge as potentially significant. This information can be used to design future research so as to control and observe the effects of these variables.

The relatively overwhelming contribution of outcome variables makes the study of personality differences in the attribution of responsibility more difficult. In one sense this is a practical blessing since we can expect that most persons having to make attributions of responsibility will agree on the basis of the evidence they are given rather than differ due to their own characteristics. The experience gained in this study suggests, however, that the most fruitful area for future investigations of personality differences may lie in the respondent's perception of the degree of association between actor and outcome. In developing and validating the MARS, it appeared that individual differences emerged most clearly when persons were asked to state whether the association between actor and outcome was direct or ambiguous. This also provides a point of integration between the attribution of responsibility and the interpersonal attribution of other characteristics such as intention, effort, and ability.

This study also points the way toward future investigations of differences in attribution of responsibility for a specific causal event versus more general normative behavior. Such research will be necessary in order to further define the relations among the several

uses of responsibility: as a personality trait, to describe causal efficacy, or to describe congruence with a standard.

Among the studies which are indicated by the findings of this research should be one which administers the MARS to a group of respondents of similar academic and social characteristics with this medical group but which does not have the same association with the professional commitment of medicine. It would be valuable to find if the good greater than bad effect would be seen there. It would also be significant to find whether the assignment of sanctions paralleled the attribution of responsibility in both types of populations. The observed differences between causal and normative attribution should be further delineated, again in groups both practicing and receiving medical care.

The area of greatest individual differences was previously indicated to lie in the perception of association between an actor and outcome. The MARS can easily be adapted for exploration of that area. It should also be used to examine the practical effects of such measured differences on actual performance in the clinical setting. An additional place for practical application would be the study of such evaluatory bodies as the Student Performance Committee in an effort to predict and thus improve the understanding of the decisions of such bodies.

Summary

This research reported the development of an instrument for measuring attribution of responsibility in the context of medical education (MARS) and the subsequent use of that instrument to examine the contributions of outcome and respondent characteristics. Outcome association with the actor (direct or ambiguous), Quality of goodness or badness, and mild or severe Intensity were each shown to have significant effect. The status of the story actor showed strong effect, and the causal or normative character of the story was also significant. Respondent's Locus of Control (Internal or External) was shown to effect amount of responsibility he/she attributed.

The situational context of the respondent's judgment has been identified as an important contributor to the attribution function producing differences which lead to further questions about the intentionality or accidental quality of the actor's behavior. Judgments about degree of association between actor and outcome are suggested as a fruitful area for investigation of further individual differences.

APPENDICES

APPENDIX A

COMPOSITE PROFILE OF A "RESPONSIBLE PERSON" WITH SYNTHESIS OF CORRELATED RESEARCH FINDINGS AND CATEGORIZATION OF BEHAVIORS

APPENDIX A

Table A-1

Components of Responsibility Identified by Various Research Teams

Loftus	Havighurst & Taba	Gough, McCloskey & Meehl	Harris, et. al.	Homant, Berkowitz & Stone, Brown & Landsberger
Independence		Self confident	Strong	
		Personal security	Nonauthoritarian personality	
		Assurance		Mature
			Requires little supervision	Requires little supervision
	Reject privilege	Reject privilege		
Initiative	Initiative	Poise		Initiative
	Solves problems		Resourceful	
	Seeks service			
	Faces difficulties			
Reliability or dependability			Efficient	
	Fulfills tasks	Does his part	Gets things done	Capable
			Carries thru	
	Dependable	Dependable	Dependable	Reliable

Table A-1
(Continued)

Loftus	Havighurst & Taba	Gough, McCloskey & Meehl	Harris, et. al.	Homant, Berkowitz & Stone, Brown & Landsberger
Reliability or dependability	Punctual		Punctual	
	Consistent			
		Accepts consequences	Accountable	
		Trustworthy	Can count on	Trustworthy
	Serious		Square shooter	Honest
			Orderly	
Conformity		Conventional		
		Conforming		Conforms to social norms
Sociability	Loyal to group	Sense of obligation to group	Loyal	
			Group centered	High social desirability
	"Socially forthcoming"			
			Thinks for good of others	Helps dependent others
				Sociable

Table A-1
(Continued)

Loftus	Havighurst & Taba	Gough, McCloskey & Meehl	Harris, et. al.	Homant, Berkowitz & Stone, Brown & Landsberger
Sociability				Respected
Altruism		Sense of justice		
	Prepare for contribution to society	Concern for broader social moral issues		
			Constructive interest	
		Rightness of world		

Identification of Responsible Behaviors

Four studies have contributed the majority of this descriptive material, and their contributions will be designated according to the following key: Havighurst and Taba (1949) = I; Gough, McClosky, and Meehl (1952) = II; Harris et al. (1954, 1957, 1954a, 1954b, 1955, 1958) = III; and Brown and Landsberger (1960) = IV. According to these researchers:

The responsible person has "a strong nonauthoritarian personality" (III), with a "strong and unflagging sense of confidence in himself" (II). He considers his first duty is toward his own success (I). He requires little supervision (III), demonstrating personal independence (III) from both peers and adults (I), in carrying out his task (I) and in fulfilling his promises (I). He demonstrates initiative as "foresight" and "readiness to accept new tasks" (IV) or even seeking out opportunities for service (I). He is willing to face difficulties in carrying out what is expected of him (I) and exhibits initiative in solving such difficulties (I). He is resourceful (III). Others can count on him (II) to carry through activities (III) and fulfill tasks expected of him (I). By always completing accepted jobs (I), he demonstrates dependability (II, III), reliability (IV), conscientiousness (IV), and trustworthiness (II, IV). He is punctual, and demonstrates

this in his attendance (I). He demonstrates almost excessive emphasis on carrying his own share of burdens and duties (II). Further, he shows a ready willingness to accept the consequences of his behavior (II). He is orderly (III). He has a sense of rightness of the larger social world (II). He conforms to social norms (behavior) (III), and there is conformity between his attitudes and societal expectations (III). He has a sense of obligation to the group (II), and is socially oriented or group centered (III). He demonstrates sociability in terms of good relations with others (IV) and helpfulness to others (III, IV). He participates well (III). He is mature (III), and has constructive interests (III). He has a high but somewhat rigid set of self-demands (II) and highly developed standards (I, II) which he applies under a variety of circumstances (I). He is a straight shooter (II) with a strong sense of justice (II). He shows deep concern over the broader ethical and moral problems (II), and rejects the light, trivial, or dangerous (II). He also rejects privilege or favoritism (II) and disapproves of leniency toward athletes or talented or forgetful people (I). Although work outside school is taken somewhat more seriously than school work or activities, duties are taken seriously at school, home, and employment (I).

The responsible person demonstrates the qualities listed above in all situations with both supervisors and peers (I).

APPENDIX B

STUDY INSTRUMENTS

COLLEGE OF HUMAN MEDICINE · OFFICE OF THE DEAN EAST LANSING · MICHIGAN · 48824

May 24, 1973

MEMORANDUM

TO: Year I Students

FROM: James L. Conklin, Ph.D., Associate Dean for Student Affairs

RE: Student Participation in a Study of Professional Responsibility

Enclosed are three forms which we would appreciate your completing as part of a study of attitudes and judgments related to professional responsibility in student physicians. Medical schools, including MSU, focus on professional responsibility as an attribute to be developed by students. However, judgments of this attribute are largely personally and unsystematically arrived at. We are asking you to help us clarify the process of making such judgments by contributing your time to complete the enclosed forms. The on-going project of which this is a part is intended to contribute to both the College's developing evaluation program and future admissions considerations.

Each form has a separately identified answer sheet and instructions for completion. It should not take you longer than 45 minutes to complete the materials. Do not identify yourself on the answer sheets; they have been precoded with your CHM identification number which is only interpretable by my office. In no way will you be personally identified in the course of this study.

The forms and completed answer sheets should be returned to the Office of Student Affairs by noon, Tuesday, May 29.

Thank you for your cooperation.

COLLEGE OF HUMAN MEDICINE • OFFICE OF THE DEAN EAST LANSING • MICHIGAN • 48824

May 29, 1973

To: First Year Student # ____

From: James L. Conklin, Ph.D., Associate Dean for Student Affairs

Subject: Student Participation in Study on Professional Responsibility

We have not received the completed materials sent to you last Thursday with a requested return date of noon today. I recognize the demanding nature of your present schedule, but hope that you can take the time (45 minutes or less) to complete the forms. Our concern over the completion of these materials is related to the need for planning and program development this summer in the area of professional responsibility. Your cooperation in returning these forms as early as possible, prior to Friday June 1, is appreciated.

Should you have misplaced the forms, or received an incomplete set, Mrs. Beth Buchner of my office can assist you.

COLLEGE OF HUMAN MEDICINE · OFFICE OF STUDENT AFFAIRS EAST LANSING · MICHIGAN · 48824

August 1973

MEMORANDUM

TO:

FROM: James L. Conklin, Ph.D., Associate Dean for Admissions and Student Affairs

SUBJECT: Student Participation in Study on Professional Responsibility

We did not receive the completed responses to the attached materials when they were sent to you last May. I recognize the demanding nature of your schedule at that time, but hope that you will now find occasion to complete these forms. Your cooperation in returning the forms as early as possible is appreciated.

JLC/bjs

ATTRIBUTION OF RESPONSIBILITY

INSTRUCTIONS:

On the following pages are brief descriptions of situations involving medical students with others. For each question following a description, your task is to indicate how responsible you feel were the actions of an individual represented in the story. Judgments of responsibility are to be made on a 10 point scale moving from "not at all responsible" (1) to "completely responsible" (10).

On the Purple answer sheet, for each question darken the number corresponding to your choice of degree of responsibility. Some descriptions are followed by two questions, each related to a different individual. In these cases, there is no need for your judgments of responsibility to equal a sum of 10. That is, you may indicate that both individuals were "completely responsible" or that both were "not at all responsible" or any other combination.

You may indicate on the back of the page any comments you wish to make about the descriptions or questions. Your thoughts about "responsibility", in addition to the numerical judgments, will be helpful in ultimately defining its measurement and formal inclusion in the curriculum.

As you read through these situations some of them may strike you as particularly meaningful learning experiences. After you have finished All of the descriptions select two which you feel represent the most meaningful experiences, and two which you feel represent the least meaningful experiences. List them in the spaces below.

MOST MEANINGFUL		LEAST MEANINGFUL	
____	____	____	____

Record your judgment by question number on the separate answer sheet.

Situation A: Philip B., while serving his duty night at the hospital, spent the evening in the call room reading material relevant to some problems which his patients had. He did not get any phone calls, and so thought that there were no new admissions or other clinical experiences which he ought to pursue. If he had attempted to call the resident, he would have found that the house staff was in fact very busy that night, and was looking for him although his resident failed to phone the call room.

(1) How responsible is Philip for missing the clinical experience and not doing some share of the work?

not at all responsible — completely responsible

1 2 3 4 5 6 7 8 9 10

(2) How responsible is the resident for Philip missing the clinical experience and not doing some share of the work?

not at all responsible — completely responsible

1 2 3 4 5 6 7 8 9 10

Situation B: Kevin C. did the admissions work up of a pediatrics case which involved a very frightened and lonely child. Kevin returned several times to sit and talk with the child, and comfort him during his hospital stay. During these visits, the child became noticeably calmer and looked excited whenever Kevin came into the room.

(3) How responsible is Kevin for the child feeling better?

not at all responsible — completely responsible

1 2 3 4 5 6 7 8 9 10

Record your judgment by question number on the separate answer sheet.

Situation C: Fred H. prescribes an expensive medication for a patient's illness, without checking on the patient's financial condition or telling him how much the medication will cost. The patient cannot afford the drugs, but is ashamed to mention it to Fred. Without the medication, his illness gets worse.

(4) How responsible is Fred for the patient getting worse?

not at all responsible — completely responsible

1 2 3 4 5 6 7 8 9 10

(5) How responsible is the patient for his condition getting worse?

not at all responsible — completely responsible

1 2 3 4 5 6 7 8 9 10

Situation D: A faculty member agreed with OCI to give a scheduled lecture on a particular topic because of recent attention to that topic in the news, and new evidence of its importance in clinical medicine. He spent several hours preparing his talk. At the scheduled time however, no students showed up for the lecture. Some did not come because they were busy with other things on their schedule. Others did not come because they were not interested in that topic.

(6) Of those who did not come due to conflicts in schedule, how responsible were those students for the faculty member's wasted time?

not at all responsible — completely responsible

1 2 3 4 5 6 7 8 9 10

Record your judgment by question number on the separate answer sheet.

(7) Of those students who did not come because they were not interested in that topic, how responsible were those students for the faculty member's wasted time?

not at all responsible — completely responsible

1 2 3 4 5 6 7 8 9 10

(8) How responsible was OCI for the faculty member's wasted time?

not at all responsible — completely responsible

1 2 3 4 5 6 7 8 9 10

Situation E: Mike L. did a very thorough work up on a newly admitted patient assigned to him by Dr. Q. In addition to recording complete information, Mike identified several specific problems and planned appropriate treatment which was carried out. In reviewing the chart later, Dr. Q. was able, on the basis of the completeness of the chart, to recognize another problem, which although rare and somewhat esoteric, is life threatening. Dr. Q. sees that the problem is treated, and commends Mike for the completeness of the records in the chart.

(9) How responsible is Mike for the recognition and treatment of the additional problem?

not at all responsible — completely responsible

1 2 3 4 5 6 7 8 9 10

(10) How responsible is Dr. Q. for the recognition and treatment of the additional problem?

not at all responsible — completely responsible

1 2 3 4 5 6 7 8 9 10

Record your judgment by question number on the separate answer sheet.

Situation F: In preparing the chart notes for a patient, Bernie F. wrote the orders in an illegible manner such that they could not be read. In trying to decipher the orders, a nurse made a mistake in the translation, administered the wrong drug and the patient died.

(11) How responsible is Bernie for the patient's death?

not at all responsible — completely responsible

1 2 3 4 5 6 7 8 9 10

(12) How responsible is the nurse?

not at all responsible — completely responsible

1 2 3 4 5 6 7 8 9 10

Situation G: Tom P. was assigned a newly admitted patient to work up just after five o'clock, as he was preparing to go home. He considered doing a quick check to cover the night, and leaving the complete work up til morning. The resident told him he should stay and do the complete work up now, so that the chart will be ready for morning rounds; which Tom did.

(13) How responsible is Tom for the chart being ready for morning rounds?

not at all responsible — completely responsible

1 2 3 4 5 6 7 8 9 10

(14) How responsible is the resident for the chart being ready for morning rounds?

not at all responsible — completely responsible

1 2 3 4 5 6 7 8 9 10

Record your judgment by question number on the separate answer sheet.

Situation H: While going on rounds with the staff Dr., Robert M. asked, out of curiosity, about the connection between a specific symptom x and the treatment plan for a patient they had just seen. In explaining his answer, Dr. Z realized that he had not taken that connection into account, and changed the patient's therapy.

(15) How responsible is Robert for the patient's improvement on the new therapy?

not at all responsible — completely responsible

1 2 3 4 5 6 7 8 9 10

(16) How responsible is Dr. Z for the patient's improvement on the new therapy?

not at all responsible — completely responsible

1 2 3 4 5 6 7 8 9 10

Situation I: Brenda R. and Stephen C. were discussing the success of their class in _____, and Brenda was quite clear in expressing her disappointment that the class had failed to cover two of the assigned objectives. Without their knowledge, their conversation was overheard by a faculty member, Dr. X. It happened that Dr. X was scheduled to teach the next class in their program, and although he had not originally planned to, he saw to it that those two objectives were now covered in his class.

(17) How responsible is Brenda for the objectives being covered?

not at all responsible — completely responsible

1 2 3 4 5 6 7 8 9 10

Record your judgment by question number on the separate answer sheet.

(18) How responsible is Dr. X for the objectives being covered?

not at all responsible — completely responsible

1 2 3 4 5 6 7 8 9 10

Situation J: While on duty in the ER, Howard D. saw a patient with fever, cough, dyspnea, tiredness and dizzyness. These symptoms are almost identical to several previous cases diagnosed as flu which he had seen that day. He incorrectly diagnosed this patient as having flu and sent her home to bed. The patient returned to the ER several hours later and was seen by another member of the staff who diagnosed her as having pneumonia and had her admitted to the hospital. Her condition was only slightly worse than when Howard saw her in ER.

(19) How responsible is Howard for the patient getting worse?

not at all responsible — completely responsible

1 2 3 4 5 6 7 8 9 10

Situation K: Alan B., while on ER duty saw a patient near death in acute diabetic coma with severe Keto-acidosis. He correctly diagnosed the problem and administered the appropriate emergency treatment. The patient recovered and was stabilized on a new diet.

(20) How responsible is Alan for the patient's recovery?

not at all responsible — completely responsible

1 2 3 4 5 6 7 8 9 10

Record your judgment by question number on the separate answer sheet.

Situation L: Roberta P. did extensive literature research and review on the problems of the patients she was seeing on the medical service. Because of this, she was able to suggest for one very seriously ill patient, a recent treatment development of which she had just read. The staff man, Dr. P accepted the suggestion although he had not tried that therapy before.

(21) How responsible is Roberta for the patient's rapid improvement on the new treatment?

not at all responsible — completely responsible

1 2 3 4 5 6 7 8 9 10

(22) How responsible is Dr. P for the patient's improvement on the new treatment?

not at all responsible — completely responsible

1 2 3 4 5 6 7 8 9 10

Record your judgment by question number on the separate answer sheet.

Situation M: Jerry W. was assigned to deliver a report in a small group seminar on Wednesday. Due to a particularly heavy pt load and consequently long hours at the hospital, he was unable to prepare the report. Tuesday morning, he called the faculty member in charge, Dr. M, and explained his problem. Jerry suggested instead of his report that the group might discuss the problems inherent in the conflicts between clinical duties and studies such as reading. The faculty member accepted the suggestion and invited along for the discussion a local practitioner to also speak on the subject. The class went well, with the members learning a few techniques for resolving the conflicts of schedule, and feeling better for having discussed them.

(23) How responsible is Jerry for the class going well?

not at all responsible — completely responsible

1 2 3 4 5 6 7 8 9 10

(24) How responsible is Dr. M for the class going well?

not at all responsible — completely responsible

1 2 3 4 5 6 7 8 9 10

Situation N: After being on call for 36 hours, the last 12 of which were in the E R, Betty B saw a pt with acute infection. Due to being tired, the confusion in the room, and the severity of the pt's condition, she failed to check for a history of allergic reactions and administerd penicillin. The pt had a severe reaction went into shock, and died.

(25) How responsible is Betty for the pt's death?

not at all responsible — completely responsible

1 2 3 4 5 6 7 8 9 10

Record your judgment by question number on the separate answer sheet

Situation O: Jerry T. prescribes a drug with a stimulant effect for a child's illness without telling the mother what to expect. The child was awake and restless all night, and so kept the mother awake. The mother also got increasingly worried and upset about the child's condition, and irritable from her own tiredness.

(26) How responsible is Jerry for the mother being upset and irritable?

not at all responsible — completely responsible

1 2 3 4 5 6 7 8 9 10

(27) How responsible is the mother for being upset and irritable?

not at all responsible — completely responsible

1 2 3 4 5 6 7 8 9 10

Situation P: While on rounds with a staff man, Dr. O, Cathy G. realized that he was prescribing a bacteriostatic drug as if it were bacteriocidal, and even so, at too low a dosage for the pt's weight and condition. She pointed these facts about to the Dr., and offered to get the reference. Dr. O. chose to ignore the student's opinion, and continued treatment as he had planned. Although sure of her facts, Cathy let the matter drop. The pt suffered a relapse of the infection and his condition seriously deteriorated.

(28) How responsible was Cathy for the pt's deterioration?

not at all responsible — completely responsible

1 2 3 4 5 6 7 8 9 10

(29) How responsible was Dr. O for the pt's condition deteriorating?

not at all responsible — completely responsible

1 2 3 4 5 6 7 8 9 10

Record your judgment by question number on the separate answer sheet

Situation Q: Larry J. is quite consistent in attending all the educational meetings at the hospital. He also makes it a point to invite his classmates or encourage them to attend. Sometimes Larry learns something which is useful in the treatment of his patients. It certainly makes the persons who arrange the meetings feel that their work is worthwhile to have Larry and others attend.

(30) How responsible is Larry's behavior?

not at all responsible		average				exceptionally responsible		
1	2	3	4	5	6	7	8	9	10

Situation R: Hearing of a disaster, Harry M., a medical student from another area who happened to be on vacation nearby, presented himself at the emergency room of the hospital and offered to help in any way he could.

(31) How responsible was Harry's behavior?

not at all responsible		average				exceptionally responsible		
1	2	3	4	5	6	7	8	9	10

Situation S: Paul C. spends a great deal of time talking to the pts assigned to him. He explains the purpose and process of each procedure he performs during both examination and treatment. He listens to the pt's discussions, sometimes at great length. He tries to answer their questions in as much detail as they can understand. While the pts like this treatment very much, it brings about some difficulties. It seems to the staff that frequently when they want to see him, Paul is with a pt. Also it happens that since Paul takes longer to work up each patient, he does fewer work ups than some of his class mates.

(32) How responsible is Paul's behavior?

not at all responsible		average				exceptionally responsible		
1	2	3	4	5	6	7	8	9	10

Record your judgment by question number on the separate answer sheet

Situation T: John R. was assigned a pt for admission to the medical ward during his rotation there. He did a thorough work up, and followed the pt through his hospital stay. John also made an effort to follow the pt after discharge, during his subsequent visits to the out-pt care unit, even though he was on a different rotation.

(33) How responsible was John's behavior?

not at all responsible		average				exceptionally responsible		
1	2	3	4	5	6	7	8	9	10

Situation U: Jim T. regularly arrives at the hospital early, sometimes even before the house staff, to review his pt's charts and when possible do some related reading about their problems. Because of this, he is usually prepared to answer the staff man's questions about his pts.

(34) How responsible is Jim's behavior?

not at all responsible		average				exceptionally responsible		
1	2	3	4	5	6	7	8	9	10

Situation V: While on rounds one morning, a staff man, Dr. A, led a group of students into an examining room where a resident was maintaining a cystoscope in the bladder of a pt. Dr. A announces "Here we have an advanced case of _____." Jack E. left the room and later confronted Dr. A with the accusation of treating the pt inhumanely -- be referring to him as a "case of___", by not introducing him by name, by not explaining to him the students' purpose, and by expecting him to endure the painful procedure for so long while each student examined him. Dr. A accused Jack of being insubordinate, conceited, and not learning medical material and reported him to the student performance committee.

(35) How responsible was Jack's behavior?

not at all responsible		average				exceptionally responsible		
1	2	3	4	5	6	7	8	9	10

Record your judgment by question number on the separate answer sheet

(36) How responsible was Dr. A's behavior?

not at all responsible		average				exceptionally responsible		
1	2	3	4	5	6	7	8	9	10

Situation W: Peter F. makes a special point of learning the names of the ward personnel on the services on which he works. He tries to establish a relationship in which they feel free to talk to him about the things they feel are going on which affect him or his pts, including things which are not strictly medical. This encourages them to make suggestions about treatment for his pts, even though he does not always accept their suggestions. It also leads them to report to him things he does which bother them.

(37) How responsible is Peter's behavior?

not at all responsible		average				exceptionally responsible		
1	2	3	4	5	6	7	8	9	10

Situation X: When just about to leave the hospital, Sam R. is invited by a classmate to stay and talk with him about an especially difficult and acute case which the classmate is treating, and which is similar to a case Sam successfully treated a while ago. Together they hope to determine a treatment plan which might improve the chances for the pt's recovery, although they are currently very poor. Although it is his wedding anniversary, and Sam has promised his wife he would be home for a special dinner she wanted to prepare, he stays to help with the pt's treatment.

(38) How responsible is Sam's behavior?

not at all responsible		average				exceptionally responsible		
1	2	3	4	5	6	7	8	9	10

(39) Assuming that he knew of Sam's plans for the evening, how responsible is the classmate's behavior?

not at all responsible		average				exceptionally responsible		
1	2	3	4	5	6	7	8	9	10

International Opinion Survey

Below are a number of statements about various topics. They have been collected from different groups of people and represent a variety of opinions. There are no right or wrong answers to this questionnaire: for every statement there are large numbers of people who agree and disagree. Please indicate whether you agree or disagree by marking an "X" under the agree, or disagree column. If you have no opinion or can't decide, place an "X" in the no opinion column.

On the IBM Answer Sheet, Column "1" indicates agreement; "2" no opinion, and "3" disagree.

Please read each item carefully and be sure that you indicate the response which most closely corresponds to the way which you personally feel.

1. I think the government owes every citizen a decent living.
2. Most students in school would not cheat even if they were sure of getting away with it.
3. When people are nice to me, it is generally because I have done something to make them that way.
4. I definitely cannot go along with the philosophy of "Eat, drink and be merry for tomorrow, who knows?"
5. What has happened to me in the past is my own fault. No one is responsible but me.
6. A good leader makes it clear to everybody what their jobs are.
7. By taking an active part in political and social affairs, the people can control world events.
8. Most students don't realize the extent to which their grades are influenced by accidental happenings.
9. Capable people who fail to become leaders have not taken advantage of their opportunities.
10. Most repairmen will not overcharge even if they think you are ignorant of their specialty.
11. I believe that the government has been taking over too many of the affairs of private industry.
12. Most parents can be relied upon to carry out their threats of punishment.

1. Agree
2. No opinion or can't decide
3. Disagree

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13. In the long run, people get the respect they deserve in this world.

14. Many of the unhappy things in people's lives are partly due to bad luck.

15. When people are "mean" to me, it is generally because I have done something to make them that way.

16. Using the Honor System of not having a teacher present during exams would probably result in increased cheating.

17. The average citizen can have an influence on government decisions.

18. The idea that teachers are unfair to students is nonsense.

19. A person can succeed no matter what his previous background is.

20. Most people can be counted on to do what they say they will do.

21. My politicalviews are more liberal than most peoples.

22. I am not as honest with myself as I should be.

23. When someone gets mad at me, I can usually do something to make him my friend again.

24. Many times we might just as well decide what to do by flipping a coin.

25. It is seldom profitable to try to be friends with someone if he doesn't want to be.

26. This country has a dark future unless we can attract better people into politics.

27. With enough effort, we can wipe out political corruption.

28. In the case of the well prepared student, there is rarely if ever such a thing as an unfair test.

29. A good leader molds the opinions of the group he is leading rather than merely following the wishes of the majority.

30. Most elected public officials are really sincere in their campaign promises.

31. Labor unions have acquired too much power in this country.

32. The United Nations will never be an effective force in keeping world peace.

1. Agree
2. No opinion or can't decide
3. Disagree

---

33. It is hard to know whether or not a person really likes you.

34. I have often found that what is going to happen will happen.

35. Every person should be held accountable for his own actions.

36. Parents usually can be relied upon to keep their promises.

37. In the long run, the people are responsible for bad government on a national as well as a local level.

38. Sometimes I can't understand how teachers arrive at the grades they give.

39. I can seldom make other people do the things I want them to do.

40. Most of the time I can't understand why politicians behave the way they do.

41. One should not attack the political beliefs of other people.

42. If we really knew what was going on in international politics, the public would have more reason to be frightened than they now seem to be.

43. People who can't get others to like them don't understand how to get along with others.

44. I think that life is largely a gamble.

45. Unfortunately, an individual's worth often passes unrecognized no matter how hard he tries.

46. The judiciary is a place where we can all get unbiased treatment.

47. It is difficult for people to have much control over the things politicians do in office.

48. There is a direct connection between how hard I study and the grades I get.

49. When I make plans, I am almost certain that I can make them work.

50. Most people would be horrified if they knew how much news the public hears and sees is distorted.

51. Completely free enterprise is the best policy a country can have.

52. Even though we have reports in newspapers, radio and television, it is hard to get objective accounts of public events.

1. Agree
2. No opinion or can't decide
3. Disagree

---

53. When I get into an argument, it is sometimes my fault.

54. Most people don't realize the extent to which their lives are controlled by accidental happenings.

55. No matter how hard you try some people just don't like you.

56. Most people answer public opinion polls honestly.

57. All wars could be stopped if countries would put forth more effort to prevent them.

58. Many times exam questions tend to be so unrelated to course work that studying is really useless.

59. I can usually influence people to my way of thinking if I wish.

_____Please send me a report of results when they're ready.

_____No thanks.

COMMENTS:

ATTITUDES TOWARD LEADERSHIP

DIRECTIONS: In each question are two statements of things that a leader can do. Choose the one you feel it is more important for him to do. If you feel that both alternatives are poor, choose the one you think is less poor.

Indicate your answers on the GREEN answer sheet by darkening the number which corresponds to your choice for each item.

1. (1) To make decisions independently of the group.
   (2) To really be a part of his work group.

2. (1) To let workers take time out from the monotony when they wish.
   (2) To allow workers to make decisions only when given explicit authority by the leader.

3. (1) To take an interest in the worker as a person.
   (2) To maintain definite standards of performance.

4. (1) To have his workers do their work the way they think is best.
   (2) To rule with a firm hand.

5. (1) To decide in detail how the work shall be done by the workers.
   (2) To let workers make decisions whenever they feel competent.

6. (1) To make it clear that he is the leader of the group.
   (2) To have workers settle by themselves most of their job problems.

7. (1) To have the workers settle by themselves most problems.
   (2) To have scheduled rest periods.

8. (1) To have his workers do their work the way they think is best.
   (2) To assign specific responsibilities and duties daily.

9. (1) To do the important jobs himself.
   (2) To have workers take their rest periods when they wish.

10. (1) To feel he belongs in his group.
    (2) To reward the good workers.

11. (1) To have his workers do the work the way they think is best.
    (2) To have the worker depend upon him to make decisions.

12. (1) To get the work done on time.
    (2) To be friendly toward his workers.

13. (1) To act as he thinks best regardless of the views of his workers.
    (2) To be proud of his work group.

14. (1) To give the workers the power to act independently of him.
    (2) To assign workers to particular tasks.

15. (1) To do the important jobs himself.
    (2) To let the workers decide how to do each task.

16. (1) To leave it up to each worker to get his share of the work done.
    (2) To set up most projects himself.

17. (1) To call the group together to discuss the work.
    (2) To work right alongside the workers.

18. (1) To pitch right in with the workers.
    (2) To plan the work carefully.

19. (1) To explain carefully each worker's duties to him.
    (2) To spend some of his time helping to get the work done.

20. (1) To work hard himself.
    (2) To schedule the work of the men carefully.

21. (1) To be an authority in the type of work the group does.
    (2) To tell poor workers when their work isn't measuring up to what it should be.

22. (1) To do the same work as his men whenever time allows.
    (2) To plan how his men will do the job.

23. (1) To call the group together to discuss the work.
    (2) To attempt to make his work not too different from the work of his men.

24. (1) To be respected as a man of high technical skill in his field.
    (2) To spend over half his time in supervisory activities such as planning and scheduling.

25. (1) To let his workers know how they are doing on their jobs.
    (2) To spend some of his time helping to get the work done.

26. (1) To pass along to his workers information from higher management.
    (2) To help get the work done.

27. (1) To be known as a man of great technical skill in the field.
    (2) To schedule the work to be done.

28. (1) To meet with the workers to consider proposed changes.
    (2) To pitch right in with the workers to help make changes.

29. (1) To explain the duties of each worker's job to him until he really understands them.
    (2) To pitch right in with the workers.

30. (1) To perform the same work as the workers whenever possible.
    (2) To plan his day's activities in considerable detail.

31. (1) To be known as a skillful trainer.
    (2) To set an example by working hard himself.

32. (1) To work right alongside his workers.
    (2) To try out new ideas on the work group.

ADJECTIVE CHECKLIST

INSTRUCTIONS:

On the following pages is a list of adjectives or phrases which describe human qualities or behavior. For each one, please mark on the Red answer sheet number "2" if you feel the statement is generally true for you; if you feel that the statement is generally false for you, mark number "1". Please make a decision one way or the other for every statement. After you finish check to see that you have marked 134 responses.

Answering Key: Generally True = 2
Generally False = 1

1. Able to give orders
2. Appreciative
3. Apologetic
4. Able to take care of self
5. Accepts advice readily
6. Able to doubt others
7. Affectionate and understanding
8. Acts important
9. Able to criticize self
10. Admires and imitates others
11. Agrees with everyone
12. Always ashamed of self
13. Very anxious to be approved of
14. Always giving advice
15. Bitter
16. Bighearted and unselfish
17. Boastful
18. Businesslike
19. Bossy
20. Can be frank and honest
21. Clinging vine
22. Can be strict if necessary
23. Considerate
24. Cold and unfeeling
25. Can complain if necessary
26. Cooperative
27. Complaining
28. Can be indifferent to others
29. Critical of others
30. Can be obedient
31. Cruel and unkind
32. Dependent
33. Dictatorial
34. Distrusts everybody
35. Dominating
36. Easily embarrassed
37. Eager to get along with others
38. Easily fooled
39. Egotistical and conceited
40. Easily led
41. Encouraging others
42. Enjoys taking care of others
43. Expects everyone to admire him
44. Faithful follower
45. Frequently disappointed
46. Firm but just
47. Fond of everyone
48. Forceful
49. Friendly
50. Forgives anything

PLEASE DO NOT OMIT ANY ITEMS

Answering Key: Generally True = 2
Generally False = 1

51. Frequently angry
52. Friendly all the time
53. Generous to a fault
54. Gives freely of self
55. Good leader
56. Grateful
57. Hard-boiled when necessary
58. Helpful
59. Hard-hearted
60. Hard to convince
61. Hot-tempered
62. Hard to impress
63. Impatient with others' mistakes
64. Independent
65. Irritable
66. Jealous
67. Kind and reassuring
68. Likes responsibility
69. Lacks self-confidence
70. Likes to compete with others
71. Lets others make decisions
72. Likes everybody
73. Likes to be taken care of
74. Loves everyone
75. Makes a good impression
76. Manages others
77. Meek
78. Modest
79. Hardly ever talks back
80. Often admired
81. Obeys too willingly
82. Often gloomy
83. Outspoken
84. Overprotective of others
85. Often unfriendly
86. Oversympathetic
87. Often helped by others
88. Passive and unaggressive
89. Proud and self-satisfied
90. Always pleasant and agreeable
91. Resentful
92. Respected by others
93. Rebels against everything
94. Resents being bossed
95. Self-reliant and assertive
96. Sarcastic
97. Self-punishing
98. Self-confident
99. Self-seeking
100. Shrewd and calculating

PLEASE DO NOT OMIT ANY ITEMS

Answering Key: Generally True = 2
Generally False = 1

101. Self-respecting
102. Shy
103. Sincere and devoted to friends
104. Selfish
105. Skeptical
106. Sociable and neighborly
107. Slow to forgive a wrong
108. Somewhat snobbish
109. Spineless
110. Stern but fair
111. Spoils people with kindness
112. Straightforward and direct
113. Stubborn
114. Suspicious
115. Too easily influenced by friends
116. Thinks only of self
117. Tender and soft hearted
118. Timid
119. Too lenient with others
120. Touchy and easily hurt
121. Too willing to give to others
122. Tries to be too successful
123. Trusting and eager to please
124. Tries to comfort everyone
125. Usually gives in
126. Very respectful to authority
127. Wants everyone's love
128. Well thought of
129. Wants to be led
130. Will confide in anyone
131. Warm
132. Wants everyone to like him
133. Will believe anyone
134. Well-behaved

PLEASE DO NOT OMIT ANY ITEMS

APPENDIX C

VALIDITY STUDY ON MARS

APPENDIX C

Attribution of Responsibility

Instructions:

On the following pages are brief descriptions of situations involving medical students with others. For each situation, you are asked to indicate certain qualities about the situation. Whether the outcome is good or bad, mild or severe, and whether it has a direct or ambiguous association with the actor.

On the attached answer sheet, for each question darken the number which indicates your answer - column 1 indicates the first choice, column 2 indicates the second.

PLEASE USE PENCIL ONLY TO MARK YOUR ANSWERS!

You may indicate on the test sheets any comments you wish to make about the descriptions or questions. Your thoughts about responsibility will be helpful in ultimately defining its measurement and inclusion in the curriculum.

Students should please mark their answer sheet with the CHM id number. Faculty should mark their name please.

Situation A: Philip B., while serving his duty night at the hospital, spent the evening in the call room reading material relevant to some problems which his patients had. He did not get any phone calls, and so thought that there were no new admissions or other clinical experiences which he ought to pursue. If he had attempted to call the resident, he would have found that the house staff was in fact very busy that night, and was looking for him although his resident failed to phone the call room.

1. In terms of this story would you consider the outcome to be:

____ good ____ bad

2. Would you consider the outcome to be:

____ mild ____ severe

3. Would you consider the association between the student and the outcome to be:

____ direct ____ ambiguous

4. Would you consider the association between the resident and the outcome to be:

____ direct ____ ambiguous

Other comments:

Situation B: Kevin C. did the admissions work up of a pediatrics case which involved a very frightened and lonely child. Kevin returned several times to sit and talk with the child, and comfort him during his hospital stay. During these visits, the child became noticeably calmer and looked excited whenever Kevin came into the room.

5. In terms of this story would you consider the outcome to be:

____ good ____ bad

6. Would you consider the outcome to be:

____ mild ____ severe

7. Would you consider the association between the student and the outcome to be:

____ direct ____ ambiguous

8. Would you consider the association between the child and the outcome to be:

____ direct ____ ambiguous

Other comments:

Situation C: Fred H. prescribes an expensive medication for a patient's illness, without checking on the patient's financial condition or telling him how much the medication will cost. The patient cannot afford the drugs, but is ashamed to mention it to Fred. Without the medication, his illness gets worse.

9. In terms of this story would you consider the outcome to be:

____ good ____ bad

10. Would you consider the outcome to be:

____ mild ____ severe

11. Would you consider the association between Fred and the outcome to be:

____ direct ____ ambiguous

12. Would you consider the association between the patient and the outcome to be:

____ direct ____ ambiguous

Other comments:

Situation D: A faculty member agreed with OCI to give a scheduled lecture on a particular topic because of recent attention to that topic in the news, and new evidence of its importance in clinical medicine. He spent several hours preparing his talk. At the scheduled time however, no students showed up for the lecture. Some did not come because they were busy with other things on their schedule. Others did not come because they were not interested in that topic.

13. In terms of this story would you consider the outcome to be:

____ good ____ bad

14. Would you consider the outcome to be:

____ mild ____ severe

15. Would you consider the association between those with schedule conflicts and the outcome to be:

____ direct ____ ambiguous

16. Would you consider the association between those with no interest and the outcome to be:

____ direct ____ ambiguous

17. Would you consider the association between OCI and the outcome to be:

____ direct ____ ambiguous

Other comments:

Situation E: Mike L. did a very thorough work up on a newly admitted patient assigned to him by Dr. Q. In addition to recording complete information, Mike identified several specific problems and planned appropriate treatment which was carried out. In reviewing the chart later, Dr. Q. was able, on the basis of the completeness of the chart, to recognize another problem, which although rare and somewhat esoteric, is life threatening. Dr. Q. sees that the problem is treated, and commends Mike for the completeness of the records in the chart.

18. In terms of this story would you consider the outcome to be:

____ good ____ bad

19. Would you consider the outcome to be:

____ mild ____ severe

20. Would you consider the association between Mike and the outcome to be:

____ direct ____ ambiguous

21. Would you consider the association between Dr. Q. and the outcome to be:

____ direct ____ ambiguous

Other comments:

Situation F: In preparing the chart notes for a patient, Bernie F. wrote the orders in an illegible manner such that they could not be read. In trying to decipher the orders, a nurse made a mistake in the translation, administered the wrong drug and the patient died.

22. In terms of this story would you consider the outcome to be:

____ good ____ bad

23. Would you consider the outcome to be:

____ mild ____ severe

24. Would you consider the association between Bernie and the outcome to be:

____ direct ____ ambiguous

25. Would you consider the association between the nurse and the outcome to be:

____ direct ____ ambiguous

Other comments:

Situation G: Tom P. was assigned a newly admitted patient to work up just after five o'clock, as he was preparing to go home. He considered doing a quick check to cover the night, and leaving the complete work up til morning. The resident told him he should stay and do the complete work up now, so that the chart would be ready for morning rounds; which Tom did.

26. In terms of this story would you consider the outcome to be:

____ good ____ bad

27. Would you consider the outcome to be:

____ mild ____ severe

28. Would you consider the association between Tom and the outcome to be:

____ direct ____ ambiguous

29. Would you consider the association between the resident and the outcome to be:

____ direct ____ ambiguous

Other comments:

Situation H: While going on rounds with the staff Dr., Robert M. asked, out of curiosity, about the connection between a specific symptom x and the treatment plan for a patient they had just seen. In explaining his answer, Dr. Z realized that he had not taken that connection into account, and changed the patient's therapy.

30. In terms of this story would you consider the outcome to be:

____ good ____ bad

31. Would you consider the outcome to be:

____ mild ____ severe

32. Would you consider the association between Robert and the outcome to be:

____ direct ____ ambiguous

33. Would you consider the association between the Dr. and the outcome to be:

____ direct ____ ambiguous

Other comments:

Situation I: Brenda R. and Stephen C. were discussing the success of their class in _____, and Brenda was quite clear in expressing her disappointment that the class had failed to cover two of the assigned objectives. Without their knowledge, their conversation was overheard by a faculty member, Dr. X. It happened that Dr. X was scheduled to teach the next class in their program, and although he had not originally planned to, he saw to it that those two objectives were now covered in his class.

34. In terms of this story would you consider the outcome to be:

____ good ____ bad

35. Would you consider the outcome to be:

____ mild ____ severe

36. Would you consider the association between Brenda and the outcome to be:

____ direct ____ ambiguous

37. Would you consider the association between Dr. X and the outcome to be:

____ direct ____ ambiguous

Other comments:

Situation J: While on duty in the ER, Howard D. saw a patient with fever, cough, dyspnea, tiredness and dizzyness. These symptoms are almost identical to several previous cases diagnosed as flu which he had seen that day. He incorrectly diagnosed this patient as having flu and sent her home to bed. The patient returned to the ER several hours later and was seen by another member of the staff who diagnosed her as having pneumonia and had her admitted to the hospital. Her condition was only slightly worse than when Howard saw her in ER.

38. In terms of this story would you consider the outcome to be:

____ good ____ bad

39. Would you consider the outcome to be:

severe

40. Would you consider the association between Howard and the outcome to be:

____ direct ____ ambiguous

41. Would you consider the association between the other staff member and the outcome to be:

____ direct ____ ambiguous

Other comments:

Situation K: Alan B., while on ER duty saw a patient near death in acute diabetic coma with severe Keto-acidosis. He correctly diagnosed the problem and administered the appropriate emergency treatment. The patient recovered and was stabilized on a new diet.

42. In terms of this story would you consider the outcome to be:

____ good ____ bad

43. Would you consider the outcome to be:

____ mild ____ severe

44. Would you consider the association between Alan and the outcome to be:

____ direct ____ ambiguous

Other comments:

Situation L: Roberta P. did extensive literature research and review on the problems of the patients she was seeing on the medical service. Because of this, she was able to suggest for one very seriously ill patient, a recent treatment development of which she had just read. The staff man, Dr. P accepted the suggestion although he had not tried that therapy before, and the patient improved rapidly.

45. In terms of this story would you consider the outcome to be:

____ good ____ bad

46. Would you consider the outcome to be:

____ mild ____ severe

47. Would you consider the association between Roberta and the outcome to be:

____ direct ____ ambiguous

48. Would you consider the association between Dr. P. and the outcome to be:

____ direct ____ ambiguous

Other Comments:

Situation M: Jerry W. was assigned to deliver a report in a small group seminar on Wednesday. Due to a particularly heavy pt load and consequently long hours at the hospital, he was unable to prepare the report. Tuesday morning, he called the faculty member in charge, Dr. M, and explained his problem. Jerry suggested instead of his report that the group might discuss the problems inherent in the conflicts between clinical duties and studies such as reading. The faculty member accepted the suggestion and invited along for the discussion a local practitioner to also speak on the subject. The class went well, with the members learning a few techniques for resolving the conflicts of schedule, and feeling better for having discussed them.

49. In terms of this story would you consider the outcome to be:

____ good ____ bad

50. Would you consider the outcome to be:

____ mild ____ severe

51. Would you consider the association between Jerry and the outcome to be:

____ direct ____ ambiguous

52. Would you consider the association between Dr. M. and the outcome to be:

____ direct ____ ambiguous

Other comments:

Situation N: After being on call for 36 hours, the last 12 of which were in the ER, Betty B saw a pt with acute infection. Due to being tired, the confusion in the room, and the severity of the pt's condition, she failed to check for a history of allergic reactions and administered penicillin. The pt had a severe reaction, went into shock, and died.

53. In terms of this story would you consider the outcome to be:

____ good ____ bad

54. Would you consider the outcome to be:

____ mild ____ severe

55. Would you consider the association between Betty and the outcome to be:

____ direct ____ ambiguous

Other comments:

Situation O: Jerry T. prescribes a drug with a stimulant effect for a child's illness without telling the mother what to expect. The child was awake and restless all night, and so kept the mother awake. The mother also got increasingly worried and upset about the child's condition, and irritable from her own tiredness.

56. In terms of this story would you consider the outcome to be:

____ good ____ bad

57. Would you consider the outcome to be:

____ mild ____ severe

58. Would you consider the association between Jerry and the outcome to be:

____ direct ____ ambiguous

59. Would you consider the association between the mother and the outcome to be:

____ direct ____ ambiguous

Other comments:

Situation P: While on rounds with a staff man, Dr. O, Cathy G. realized that he was prescribing a bacteriostatic drug as if it were bacteriocidal, and even so, at too low a dosage for the pt's weight and condition. She pointed these facts out to the Dr., and offered to get the reference. Dr. O. chose to ignore the student's opinion, and continued treatment as he had planned. Although sure of her facts, Cathy let the matter drop. The pt suffered a relapse of the infection and his condition seriously deteriorated.

60. In terms of this story would you consider the outcome to be:

____ good ____ bad

61. Would you consider the outcome to be:

____ mild ____ severe

62. Would you consider the association between Cathy and the pt's deterioration to be:

____ direct ____ ambiguous

63. Would you consider the association between Dr. O and the pt's deterioration to be:

____ direct ____ ambiguous

Other comments:

Situation Q: Larry J. is quite consistent in attending all the educational meetings at the hospital. He also makes it a point to invite his classmates or encourage them to attend. Sometimes Larry learns something which is useful in the treatment of his patients. It certainly makes the persons who arrange the meetings feel that their work is worthwhile to have Larry and other attend.

64. In terms of this story would you consider the outcome to be:

____ good ____ bad

65. Would you consider the outcome to be:

____ mild ____ severe

66. Would you consider the association between Larry and the outcome to be:

____ direct ____ ambiguous

Other comments:

Situation R: Hearing of a disaster, Harry M., a medical student from another area who happened to be on vacation nearby, presented himself at the emergency room of the hospital and offered to help in any way he could.

7. In terms of this story would you consider the outcome to be:

____ good ____ bad

8. Would you consider the outcome to be:

____ mild ____ severe

). Would you consider the association between Harry and the outcome to be:

____ direct ____ ambiguous

Other comments:

Situation S: Paul C. spends a great deal of time talking to the pts assigned to him. He explains the purpose and process of each procedure he performs during both examination and treatment. He listens to the pt's discussions, sometimes at great length. He tries to answer their questions in as much detail as they can understand. While the pts like this treatment very much, it brings about some difficulties. It seems to the staff that frequently when they want to see him, Paul is with a pt. Also it happens that since Paul takes longer to work up each patient, he does fewer work ups than some of his class mates.

70. In terms of this story would you consider the outcome to be:

____ good ____ bad

71. Would you consider the outcome to be:

____ mild ____ severe

72. Would you consider the association between Paul and the outcome to be:

____ direct ____ ambiguous

Other comments:

Situation T: John R. was assigned a pt for admission to the medical ward during his rotation there. He did a thorough work up, and followed the pt through his hospital stay. John also made an effort to follow the pt after discharge, during his subsequent visits to the out-pt care unit, even though he was on a different rotation.

73. In terms of this story would you consider the outcome to be:

____ good ____ bad

74. Would you consider the outcome to be:

____ mild ____ severe

75. Would you consider the association between John and the outcome to be:

____ direct ____ ambiguous

Other comments:

Situation U: Jim T. regularly arrives at the hospital early, sometimes even before the house staff, to review his pt's charts and when possible do some related reading about their problems. Because of this, he is usually prepared to answer the staff man's questions about his pts.

76. In terms of this story would you consider the outcome to be:

____ good ____ bad

77. Would you consider the outcome to be:

____ mild ____ severe

78. Would you consider the association between Jim and the outcome to be:

____ direct ____ ambiguous

Other comments:

Situation V: While on rounds one morning, a staff man, Dr. A, led a group of students into an examining room where a resident was maintaining a cystoscope in the bladder of a pt. Dr. A announces "Here we have an advanced case of _____." Jack E. left the room and later confronted Dr. A with the accusation of treating the pt inhumanely -- by referring to him as a "case of _____", by not introducing him by name, by not explaining to him the students' purpose, and by expecting him to endure the painful procedure for so long while each student examined him. Dr. A accused Jack of being insubordinate, conceited, and not learning medical material and reported him to the student performance committee.

79. In terms of this story would you consider the outcome to be:

____ good ____ bad

80. Would you consider the outcome to be:

____ mild ____ severe

81. Would you consider the association between Dr. A and the outcome to be:

____ direct ____ ambiguous

82. Would you consider the association between Jack and the outcome to be:

____ direct ____ ambiguous

Other comments:

Situation W: Peter F. makes a special point of learning the names of the ward personnel on the services on which he works. He tries to establish a relationship in which they feel free to talk to him about the things they feel are going on which affect him or his pts, including things which are not strictly medical. This encourages them to make suggestions about treatment for his pts, even though he does not always accept their suggestions. It also leads them to report to him things he does which bother them.

83. In terms of this story would you consider the outcome to be:

____ good ____ bad

84. Would you consider the outcome to be:

____ mild ____ severe

85. Would you consider the association between Peter and the outcome to be:

____ direct ____ ambiguous

Other comments:

Situation X: When just about to leave the hospital, Sam R. is invited by a classmate to stay and talk with him about an especially difficult and acute case which the classmate is treating, and which is similar to a case Sam successfully treated a while ago. Together they hope to determine a treatment plan which might improve the chances for the pt's recovery, although they are currently very poor. Although it is his wedding anniversary, and Sam has promised his wife he would be home for a special dinner she wanted to prepare, he stays to help with the pt's treatment.

86. In terms of this story would you consider the outcome to be:

____ good ____ bad

87. Would you consider the outcome to be:

____ mild ____ severe

88. Would you consider the association between Sam and the outcome to be:

____ direct ____ ambiguous

89. Would you consider the association between the classmate and the outcome to be:

____ direct ____ ambiguous

Other comments:

APPENDIX D

CORRELATIONS AMONG STORY VARIABLES

APPENDIX D

Table D-1

Correlations Among Story Variables

	MARS Causal	MARS Normative	MARS Student	IOS Trust	IOS 1	IOS 2	IOS 3	IOS 4	IOS 5	IOSTOT	ICL LOV	ICL DOM	ATL Consideration	ATL Responsibility
MARS Causal	1													
MARS Normative	.27	1												
MARS Student	.79	.31	1											
IOS Trust	.10	-.03	.04	1										
IOS 1	-.08	-.03	-.05	.16	1									
IOS 2	-.00	-.03	.01	.16	-.28	1								
IOS 3	-.06	-.02	-.11	.23	-.03	.16	1							
IOS 4	.05	-.08	-.03	.25	.12	.21	.24	1						
IOS 5	.02	-.01	-.06	.09	.48	-.29	.15	.14	1					
IOSTOT	.02	-.07	-.07	.35	.53	.20	.48	.59	.64	1				
ICL LOV	.11	.24	.15	.07	-.00	.08	.12	.03	.01	.10	1			
ICL DOM	.11	-.01	.11	.18	.05	.11	.09	-.05	.08	.12	-.20	1		
ATL Consideration	.12	.07	.07	.01	-.08	-.04	-.01	-.19	.00	-.05	.10	-.08	1	
ATL Responsibility	-.00	-.14	-.01	.15	.12	.14	.11	.22	.02	.18	-.10	.12	-.36	1

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