

**MEASURING ATTRIBUTIONS IN CLOSE RELATIONSHIPS: AN EXTENSION OF THE
CAUSAL DIMENSION SCALE**

by

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MEASURING ATTRIBUTIONS IN CLOSE RELATIONSHIPS: AN EXTENSION OF THE
CAUSAL DIMENSION SCALE

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ABSTRACT

The measurement of attributions has received increasing attention with the recent proliferation of research in attribution theory. Several instruments have been developed to assess attributional processes in a variety of social and psychological domains ranging from academic achievement to marital relationships. This study is an extension of the Causal Dimension Scale designed by Russell to measure attributions in the domain of achievement motivation. The purpose of this study was to develop an instrument designed to measure the attributions of people involved in close interpersonal relationships and to conduct reliability and validity tests of the instrument.

A questionnaire was developed and administered to 168 undergraduate students in education at Simon Fraser University. A list of 56 scenarios, each comprised of a hypothetical event and an attribution for the event, were presented to each participant for rating across seven attributional dimensions: self-other, self-circumstances, stability, globality, controllability, intentionality, and attitude. Each of the seven dimensions was measured by a three question subscale. A multiple-matrix sampling design was employed to select one question from each of these subscales to present to one third of the subjects. The reliability of these three question subscales was analyzed using generalizability theory. The validity of the instrument was assessed by determining the degree to which participants shared similar perceptions of the questions when responding to the scenarios.

The validity of the instrument is discussed in terms of the potential relevance of the seven attributional dimensions to the domain of close interpersonal relationships. Potential clinical applications of the instrument are

proposed. Some limitations of the study are discussed with recommendations for future research.

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CHAPTER I

INTRODUCTION

Attribution theory refers to the study of perceived causation. An important tenet of attribution theory is that people interpret behavior in terms of its causes and that these interpretations significantly impact their reactions to the behavior. The extensive amount of literature on attribution theory is indicative of the widespread interest among researchers concerning the causal explanations that ordinary people make about each other's behavior. Attribution theory has been extended to a number of areas within educational and social psychology, including achievement motivation, depression, and interpersonal relationships. There is a concurrent interest in the categorization and quantification of the attributional processes in these various domains.

Statement of the Problem

The focus of this thesis is the development and validation of an instrument developed specifically to measure the causal attributions of people involved in close relationships. The researcher concerned with this task must be sensitive to the very real likelihood that the nature of attributional activity is closely associated with the particular domain of human behavior that is being targeted. Weiner (1983) recognized that causal explanations given for achievement-related events may be inappropriate to explain events in other domains. Fincham (1983) points to the unique quality of close relationships and suggests that attributions for these interpersonal events are quite different from those made in other contexts. Therefore, an important component of this study was to identify and categorize the causal attributions which are relevant to close interpersonal relationships.

Although several instruments for measuring attributions have been developed, none of the existing measures are suitable for use in a clinical setting with people experiencing relationship difficulties. An instrument appropriate for this use will be able to measure the attributions of *specific* problems that arise in a relationship context. The Marital Attribution Style Questionnaire (Fincham, 1987) is representative of instruments that have been developed for measuring attributional activity in close relationships, yet it assesses a person's perceptions of the causes of *hypothetical* spouse behaviors and is cross-situational rather than situation specific. A more suitable model of attribution measurement is represented by the Causal Dimension Scale (Russell, 1982), which is used to assess the causal perceptions of people in real-life, achievement oriented events. The instrument developed in this study is based on the format of the Causal Dimension Scale but applied to the specific domain of close interpersonal relationships.

The specific research goals to be addressed in this study are as follows:

- a) To develop an instrument specifically designed for measuring the attributions of people involved in close relationships.
- b) To estimate the reliability of this instrument.
- c) To generate data investigating the validity of this instrument.

A questionnaire was constructed to provide participants with the opportunity to respond to the questions in the instrument for each of 56 hypothetical event-cause scenarios. While imagining themselves actively involved in each scenario, the participants evaluated the cause of the event using the semantic differential questions in the instrument. The basic design of this empirical study

replicates in part and extends Russell's Causal Dimension Scale. The reliability was estimated by performing separate reliability analyses on each of the seven subscales in the instrument. The validity of the instrument was tested by subjecting each subscale to a separate analysis of variance.

Overview

Chapter 1 of this thesis introduces the study and includes a statement of the problem. Chapter 2 reviews the attribution literature and traces the development of some of the more influential theories. Included is a discussion of how attributions have been categorized into the dimensions appropriate for an instrument designed to measure attributions in close relationships. Chapter 2 concludes with a survey of the measurement issues most relevant to this thesis. Chapter 3 presents the methodology, focusing on the development and administration of the questionnaire. Chapter 4 presents the results while Chapter 5 discusses these results, the limitations of the study, the potential clinical applications of the instrument, and concludes with some recommendations for further research.

CHAPTER II

LITERATURE REVIEW

Introduction

The roots of attribution theory and research are commonly traced back to Heider's (1958) classic book on the topic, "The Psychology of Interpersonal Relations." The rapid proliferation of articles published since that time attests to the burgeoning interest in the field. Kelley and Michela (1980) identified over 900 relevant references for the 10 year period preceding their review. The important role of attributions in common experience is at least partially responsible for this growing interest. Heider (1976) suggested that "attribution is part of our cognition of the environment. Whenever you cognize your environment you will find attribution occurring" (p. 18). Researchers and practitioners alike have begun to recognize that the development of attribution theory represents an important step toward an increased understanding of a wide range of intrapersonal and interpersonal processes within educational and social psychology.

The spontaneity of attributions. It has been argued that people have no direct access to the cognitive processes that presumably determine behavior (Nisbett & Wilson, 1977). Furthermore, it has been suggested that attributional activity in general is merely an artifact of the experimenter's methodological manipulations and that the spontaneity of such causal explanations has not been adequately demonstrated. This argument has not gone unchallenged. There are several studies that provide support for the spontaneity of attributions apart from the explicit prompts of the researcher (Weiner, 1985; Winter & Uleman, 1984; Wong & Weiner, 1981). Smith and Miller (1979) proposed that attributional activity is an integral component of the encoding of information rather than a separate

mental operation occurring at retrieval. They argue that "the cognitive theories and studies support the idea that attributional (cause–inferring) processing is intrinsically involved in the initial comprehension of sentences and therefore that it goes on all the time, not just when a participant is asked an attributional question" (p. 2247). Holtzworth–Munroe and Jacobson (1985) successfully made use of an indirect probe to assess attributional activity without explicitly requesting it. Weiner (1985a), in a review of this theme in the literature, presented extensive evidence to demonstrate the prevalence of freely–occurring attributional activity. Many of the studies he reviewed involved the coding of popular books, magazines, business reports, and everyday conversations. It was apparent that the researcher does not have to go far to discover spontaneous attributional activity. Weiner (1985a) concluded that "the topic under investigation therefore should not be the existence of attributional search, but rather the conditions under which it is most promoted" (p. 81).

The conditions associated with attributional activity. In light of the evidence which appears to demonstrate that attributional activity is indeed as common as Heider (1958) first suggested, it is appropriate to discuss the conditions under which such activity is most likely to occur. Harvey, Yarkin, Lightner, and Town (1980) report that the amount of attributional activity is dependent on the cognitive stimulation of the person who is trying to interpret the events in his/her environment. They discovered that seriousness of outcome, empathic (as opposed to detached) cognitive set, and anticipated involvement are factors which facilitate the search for causal explanations. Certain conditions are also believed to enhance attributional activity in marital relationships. Baucom (1987) proposes that attributions in marriage are most likely to occur when the targetted behavior is unpredictable, novel, negative, or perceived as particularly important to oneself

or one's marriage. Holtzworth-Munroe and Jacobson (1985) found that attributional activity in spouses is increased in the presence of aversive partner behaviors.

The motivational component of attributional activity. The conditions which have just been discussed appear to be associated with attributional activity but are not necessarily causally related. It is proposed by some researchers that there may be some underlying motivational forces which provide the impetus for the attributional process. What are the factors that motivate a person to engage in an active search for causal explanations? There have been several responses to this question, but only two of the more common ones will be discussed here: a) motivation for control, and b) motivation for positive self-presentation.

Kelley (1972a) has stated, "The attributor is not simply an attributor, a seeker after knowledge; his latent goal in attaining knowledge is that of effective control of himself and his environment" (p. 22). An enhanced understanding of the causal relationships operating in one's environment is presumed to contribute to an increased level of control over that environment. Pittman and Pittman (1980) found evidence to support their hypothesis that attributional activity will increase following an experience with a lack of control. Orvis, Kelley, and Butler (1976) proposed that people who have been subjected to the negative interpersonal behavior of their relationship partners will emphasize personal responsibility in their causal explanations to exert pressure on their partners to avoid such behavior in the future. Holtzworth-Munroe and Jacobson (1985) showed that the negative behavior of a marital partner led to increased attributional activity. They explained these results on the basis of the attributor's need to be able to predict and prevent such behavior in the future. Weiner, Amirkham, Folkes, and Verette (1987) conducted a series of studies involving an attributional analysis of excuse giving. They concluded on the basis of their

results that the attributions typically provided as excuses for broken social contracts represent efforts to manipulate or control the emotions of those to whom the excuses are offered.

Communicated attributions may also be influenced by the actor's motivation to present him/herself in a favorable manner to others (Kelley & Michela, 1980). Orvis, Kelley, and Butler (1976) emphasize the important role of attributions in allowing actors in heterosexual relationships to justify and exonerate their own negative interactive behaviors to their partners. Sillars (1980) found that college students tended to overattribute responsibility for negative behaviors to their roommates and underestimate the contribution of their own behavior to conflict escalation. Ross and Sicoly (1979) found evidence for such egocentric biases in a variety of interpersonal contexts; individuals generally tend to accept more responsibility for a joint project than other contributors assign to them. These results have also been explained according to an availability bias (Ross & Sicoly, 1979; Thompson & Kelley, 1981). This hypothesis holds that one's own contributions are more readily accessible and therefore more easily retrieved. Attributional biases will be further discussed later in this review.

The Development of Attribution Theory

The disconnected nature of attribution theory. It has been suggested that attribution theory has become somewhat disconnected and is in need of theoretical integration (Harvey & Weary, 1984). Kelley and Michela (1980) concluded that the problems in the field are those of psychology in general – too few researchers spread too thinly over too many problems. Although attribution theory has its roots in social psychology, it has since branched out into the areas of achievement motivation (Weiner, 1979, 1985a, 1986), learned helplessness and depression (Abramson, Seligman, & Teasdale, 1978; Dweck, 1975),

and marital relationships (Doherty, 1982; Fincham, 1985a; Thompson & Snyder, 1986).

This lack of theoretical integration is reflected by the varying perspectives on the nature of the attributional process. Researchers over the years have conceptualized the role of the person as attributor in different ways. Heider (1958) claimed that one's understanding of the events of one's environment is gained by way of a causal analysis that is "in a way analogous to experimental methods" (p. 297). This perspective of "man as naive scientist" was later adopted by Kelley (1967) and used as the basis of his ANOVA Model of Covariation. Fincham and Jaspars (1980), on the other hand, differentiated the attribution of responsibility from traditional attribution theory. Their emphasis on the former is reflected in the coining of the title of their article: "Attribution of responsibility: From man as scientist to man as lawyer." More recently, Read (1987) suggested that present attribution theories cannot account for the knowledge used and the cognitive processes involved in making everyday causal explanations. In his knowledge structure approach to causal reasoning, he recommended that the guiding metaphor of attribution theory, people as naive scientists, be replaced with a "more appropriate metaphor: People as story understanders and story tellers" (p. 300).

Researchers over the years have tried to connect attributional functioning with other important psychological processes such as cognition, affect, and motivation. This work has resulted in a number of theories which have highlighted the important role of attributions in a variety of interpersonal and intrapersonal processes.

Correspondent Inference Theory. Jones and Davis (1965) were concerned with understanding when and how people make dispositional inferences to explain the intentional behavior of others. They assert that dispositional attributes are inferred from the effects of actions. Their principle of *noncommon effects* states that the distinctiveness of the effects of a given action and the extent to which these effects do not represent stereotypic cultural values, increases the likelihood that information about the actor will be correctly *inferred* from an action. A small number of effects which are unique (noncommon) to the action being observed, increases the chance that correct inferences will be made. Ajzen and Holmes (1976) illustrate this reasoning process by presenting to the participants in their study the scenario of a person faced with a choice among four European tour packages, only one of which included a stopover in Oslo. When the hypothetical actor selected this particular tour package (the option which included the unique effect), the participants inferred that the choice was determined by a desire to visit Oslo. To say that an *inference* is *correspondent*, then, is to say that a disposition is rather clearly reflected in behavior.

Some evidence exists to support the principle of noncommon effects. Newtonson (1974) found that fewer noncommon effects resulted in more confident and extreme inferences about the actor. Ajzen and Holmes (1976) discovered that attributions of behavior to one of its effects was greatest when the effect was unique, and decreasing according to the number of additional alternative acts common to the effect. Read (1987), however, suggests that the presence of common effects can contribute to the inference information conveyed by a noncommon effect alone, a situation which would appear to violate Jones and Davis' (1965) original theory. Nonetheless, the theory of correspondent inference has been credited with giving attribution theory definition and momentum in its

early stages (Harvey & Weary, 1984).

Kelley's Covariation Analysis Theory. Kelley (1967) proposed that attribution decisions are made on the basis of the perceived covariation of the various factors of the currently experienced event with similar events in the past. The logic of this analysis is comparable to that employed in analysis of variance and is illustrated by a three dimensional ANOVA cube. Specifically, Kelley postulates that three different kinds of information are used in this causal analysis: a) *consensus* – the degree to which other people respond similarly to the same stimulus, b) *consistency* – the degree to which the individual responds to the same stimulus consistently over time and situations, and c) *distinctiveness* – the degree to which the individual responds in the same way to other stimuli.

Kelley and Michela (1980) readily admit that attributional decisions are often made without analyzing information according to this complex model and contend that most attributions are made on the basis of preexisting suppositions about causes and expectations about the effects of these causes. The amount of information gathering is significantly reduced in this process because these well-learned patterns of cause and effect are contained in a *causal schémata* (Kelley, 1972b). This encoded experience can be accessed to make immediate inferences from only one sample of behavior.

Kelley and Michela (1980) acknowledge that the evidence in support of the covariation analysis process is mixed. However, they cite a number of studies that appear to verify the influence of each of the three ANOVA variables in causal analysis.

Reformulated Learned Helplessness Model of Depression. Learned helplessness is characterized by the expectation of failure and a deterioration of performance

in the face of failure. These cognitive and emotional deficits are evident subsequent to the experience of uncontrollable events (Dweck, 1975). The theory was revised along attributional lines to account for the generality and chronicity of depressive symptoms (Abramson, Seligman, & Teasdale, 1978). The central premise of this reformulation is that certain individuals have a specific attributional *style* which makes them especially vulnerable to depression when negative events occur (Peterson & Seligman, 1984). This particular "explanatory style" involves the tendency to give internal, stable, and global explanations for negative events, i.e., "it's me, it's going to last forever, and it's going to affect everything I do" (Peterson & Seligman, 1984, p. 350). The Attributional Style Questionnaire was developed for the purpose of assessing these attributional tendencies (Peterson, Semmel, von Baeyer, Abramson, Metalsky, & Seligman, 1982).

This model, particularly the concept of attributional style, has had a significant influence on the field of attribution theory. Fincham and colleagues (Fincham, 1985b; Fincham, Beach, & Baucom, 1987; Fincham, Beach, & Nelson, 1987; Fincham & O'Leary, 1983) have attempted to differentiate distressed and nondistressed married couples on the basis of attributional style variables. They have also developed the Marital Attribution Style Questionnaire (see Fincham, Beach, & Nelson, 1987) following the format used by Peterson et al. (1982).

Peterson and Seligman (1984) describe an extensive list of studies to support their formulation of learned helplessness and depression. However, some have criticized the research in this area for relying too heavily on college populations while remaining relatively untested in clinical settings (Gong-Guy & Hammon, 1980; Harvey & Galvin, 1984). Gong-Guy and Hammon (1980), in a study using depressed and non-depressed outpatients, found no evidence to establish an attributional style among depressed clients. Others criticize this model strictly on

the basis of the attributional style construct. Cutrona, Russell, and Jones (1985) examined the reliability and validity of the Attribution Style Questionnaire and found only weak evidence for a cross-situationally consistent attributional style. This topic will be further explored later, particularly in reference to the concept of attributional style.

An Attribution-efficacy Model. Doherty (1981a, 1981b) combined constructs from attribution theory and social learning theory to develop an attribution-efficacy model of cognitive processes in intimate conflict. This model is concerned not only with the explanations that people provide for the causes of family conflict, but also with individual's expectancies that the couple or family can master the interpersonal conflict. Doherty (1981b) views causal attributions and efficacy expectations as simultaneous, interacting cognitive processes. Certain attributions, such as those involving stable, uncontrollable causes, will likely lead to low efficacy expectations. Conversely, failures to resolve conflict lead to a sense of helplessness which, in turn, affect the attributions that are made. Doherty (1981b) views the state of low self-efficacy as very similar to learned helplessness. He suggests that low efficacy will induce: a) motivational deficits, in which the individual gives up trying to resolve the problem; and b) behavioral consequences, in which the individual may avoid the issue or engage in ritualized conflict with little hope of change.

Fincham and Bradbury (in press a) tested Doherty's model and made several conclusions based on their results. They found that this model was likely insufficient by itself to adequately explain the cognitive processes which occur in various family relationships. The model fared poorly in regard to the mother-child relationship but received stronger support when applied to the husband-wife relationship. They also emphasize the importance of distinguishing

self-efficacy from outcome expectations. They highlight the difference between the ability to perform certain interactional behaviors (self-efficacy) and the perceived likelihood that the successful performance of these behaviors will result in conflict resolution (outcome expectations). Furthermore, they suggest that Doherty (1981a, 1981b) may have missed an integral motivational phase by simply using self-efficacy theory to predict what partners will do once they have inferred the cause of conflict in a close relationship. They propose that helplessness responses may reflect an interaction between motivation and self-efficacy and is likely to involve a variety of affective factors.

Fincham and Bradbury conclude their critique of Doherty's model by affirming the utility of the attribution-efficacy paradigm as an initial framework within which to examine these cognitive patterns in family relationships. However, they issue a warning that this model may be of limited applicability across relationships, and that the self-efficacy component is not as robust as the attributional component.

Attributional Theory of Achievement Motivation and Emotion. Weiner's (1984, 1985b, 1986) theory emphasizes the impact of causal perceptions on outcome expectancy and affective reactions. Changes in expectancy of success are purportedly influenced by the perceived stability of the cause of an event. But Weiner (1985b) argues that these goal expectancies are not sufficient determinants of action. He suggests that emotions are also generated by the chosen attributions. Expectancy and affect, in turn, are presumed to guide motivated behavior.

This relationship between attributions and feelings is an important aspect of Weiner's theory, and has received some empirical support in the literature. Of

particular interest to Weiner is the apparent link between various causal dimensions and specific feelings. Russell and McAuley (1986) found that both causal *attributions* and causal *dimensions* contributed independently to affective reactions following success and failure outcomes in an achievement setting. For example, ability and effort *attributions* for success were found to elicit feelings of competence. In addition, feelings of competence were maximized when the cause of success was perceived as internal, stable, and controllable. Various combinations of one or more of these three causal *dimensions* were also connected to feelings of gratitude, anger, guilt, and surprise. Flett, Boase, McAndrews, Pliner, and Blankstein (1986) also discovered that various emotions were clearly differentiated along several dimensions of causality.

Other theories of motivation discuss the role of outcome expectancy and the connection between attributions and self-efficacy, but do not account for the important influence of emotion on motivation (see Doherty, 1981a, 1981b). Consequently, Weiner's theory represents the most thorough attempt to integrate attribution theory into an overall theory of motivation. Weiner (1985b), in discussing *goal incentives*, distinguishes between the *objective properties* of the goal (i.e., the inherent properties of a goal object) and the *subjective value* of the goal. Although causal ascriptions do not influence the *objective* properties of goal objects (a dollar has the inherent value of one dollar, regardless of how it is attained), they do affect emotional reactions, or the *subjective* consequences of goal attainment (a dollar attained by good luck could elicit surprise; a dollar earned by hard work may elicit pride). Weiner suggests that people prefer a particular goal because the anticipated consequences of achieving that goal will make them happier, give them greater satisfaction, etc. This proposition highlights the important role of emotion in motivation.

Although Weiner's model has been developed in the context of achievement motivation, he attempts to demonstrate the generality of the theory by extending the analysis to helping behavior, parole decisions, smoking cessation, and clinical issues such as rape and depression (Weiner, 1986). Weiner (1985b) defends this claim for generality on the basis that "a motivational episode is initiated following any outcome that can be construed as attainment or nonattainment of a goal" (p. 567). He then proceeds to cite numerous studies from these various domains of human behavior to demonstrate the relationship between perceived causality, expectancy change, and affect. He concludes that "these facts and relations will survive, independent of the fate of the entire theory" (Weiner, 1985b). Although it may be somewhat premature to accept the absolute generality of Weiner's model to all areas, especially to the unique domain of marital and family relationships, the importance of Weiner's contribution to attribution theory cannot be underestimated.

Causal Dimensions: The Categorization of Attributions

Developing a taxonomy of causal dimensions. Weiner (1979) acknowledges that the heart of his attributional theory of motivation consists of an "identification of the dimensions of causality and the relation of these underlying properties of causes to psychological consequences" (p. 3). Russell (1982) affirms that attributional statements are often ambiguous and may vary greatly from person to person and from situation to situation. Therefore, a critical step in attribution research has been to create a classification scheme or a taxonomy of causal attributions so that the underlying properties of causes can be determined and compared (Weiner, 1983).

Rotter (1966) initially proposed a one-dimensional classification of causality: causes were either within (internal) or outside (external) the person. Rotter

labelled this dimension *locus of control*. This classification scheme sparked a host of studies which compared attributional statements in a variety of contexts on the basis of this singular dimension (Bugaghas, Schumm, Bollman, & Jurich, 1983; Constantine & Bahr, 1980; Doherty, 1980, 1981c, 1983; Gough, 1974; Mlott & Lira, 1977; Sabatelli, Buck, & Dreyer, 1983). Despite the usefulness of this dimension, it has failed to capture the full meaning of locus attributions. Weiner (1979) contended that Rotter's (1966) *locus of control* dimension was inadequate in that it confounded two distinct dimensions of causality: *locus* and *control*. Weiner (1979) renamed the locus dimension *locus of causality* and proposed an additional *controllability* dimension to categorize causes as *controllable* or *uncontrollable*. Weiner (1979) completed his initial taxonomy of attributional dimensions by labelling a third dimension *stability*, to define causes on a *stable* versus *unstable* continuum.

Contextual issues in defining attributional dimensions. Attribution theory has been determined to be relevant not only at the *intrapersonal* level, as in achievement motivation (Weiner, 1979, 1984), but also at the *interpersonal* level, as in conflict management (Doherty, 1982; Sillars, 1980), divorce (Barron, 1987; Doherty, 1983; Newman & Langer, 1981), spouse abuse (Warner, Parker, & Calhoun, 1984), and excuse giving (Weiner, Amirkhan, Folkes, & Verette, 1987). However, the particular causes offered to explain specific events may vary across these different domains. Weiner (1983) recognizes that causes relevant to achievement-related events may be inappropriate to explain events in other motivational domains. Fincham (1983) has emphasized some inherent differences between attributions at the interpersonal level and those at the intrapersonal level and criticizes the research which has merely extrapolated ideas useful at one realm to another completely different realm. Others have noted that it is equally

untenable to generalize the results of studies across different types of interpersonal relationships (Fincham, 1983; Newman, 1981a, 1981b; Holtzworth–Munroe & Jacobson, 1985). Relationships involving *strangers* may be very different from relationships involving *intimates* (Newman, 1981a, 1981b).

Research in contexts other than achievement motivation can be credited for revising and adding to the taxonomy of dimensions originally developed by Weiner (1979). The *locus of causality* dimension as conceived by Weiner (1979) has since been recognized to be insufficient in adequately describing attributions in interpersonal relationships. Fincham (1985b) argued that an *internal-external* dimension is problematic in that it fails to distinguish among the various external causes; an external cause may rest in another person, the outside circumstances, or a relationship. Fincham and colleagues (Fincham, 1985b; Fincham, Beach, & Baucom, 1987; Fincham, Beach, & Nelson, 1987; Fincham & Bradbury, in press b) measured the attributions related to each of these external causes separately in their studies of marital relationships. Doherty (1981a) developed an even larger list of external causes to study attributions in family relationships: other family member(s), the relationship, the external environment, theological causes (i.e., God's will), and luck, chance, or fate.

An additional dimension which has received widespread recognition in the literature was originally identified by Abramson et al. (1978) in their research on depression and learned helplessness. A *global* versus *specific* dimension was used to refer to the generality of the cause, or the range of situations in which a given attribution is perceived to operate. Peterson and Seligman (1984) contended that the attributional style characteristic of depressed individuals involves the consistent use of *global* attributions to explain negative events. This dimension has alternately been labelled *globality* (Fincham & O'Leary, 1983) and *specificity*

(Doherty, 1981a). Weiner (1984, 1985b) is not convinced that globality should be granted status as a separate dimension. He alleges that both stability and globality are aspects of causal consistency: stability refers to *temporal* consistency while globality is concerned with *cross-situational* consistency (Weiner, 1984). However, Flett et al. (1986) found that globality was an important dimension in differentiating the causes of positive and negative emotions. Fincham, Beach, & Nelson (1987) conclude that "the global-specific dimension appears to be the most consistent in differentiating distressed from nondistressed spouses" (p. 745).

Attributional dimensions in intimate relationships. It is apparent from the preceding discussion that the context in which attributions are occurring is of critical importance in determining which causal dimensions are most relevant. This may be especially true in the case of intimate relationships. Fincham (1983) suggests that the key distinguishing factor in these relationships is the reciprocal, ongoing nature of the interaction. The task of interrupting the causal chain, or punctuating the behavioral sequences, is a much more complex task than previously conceived. There has only been a minimal amount of research done to identify the causal dimensions applicable to intimate relationships, but it is clear that they extend beyond the usual locus of causality, stability, and controllability dimensions highlighted in the achievement motivation literature.

Passer, Kelley, & Michela (1978), in a multidimensional scaling of the causes for negative interpersonal behavior, found that the two most significant dimensions had received little or no attention in the previous literature: a) *positive* versus *negative attitude* toward spouse, and b) *intentional* versus *unintentional*. Weiner (1985b) acknowledges that there are important instances where intent and control are distinguishable, as in negligence. However, he is

unwilling to accept it as a valid attributional dimension in that intent, unlike other dimensions which describe a *cause*, refers to a *motivational state*. Fincham and Bradbury (in press a) also distinguish between *causal* and *responsibility* attributions and agree that intent, as a responsibility dimension, should be treated differently from other causal dimensions. They contend that the determination of responsibility in close relationships rests heavily on the inference of intent.

The importance of intent in determining responsibility is also highlighted in legal philosophy (Fincham & Jaspars, 1980). Still (1988) described how the new Canadian Charter of Rights influenced the decision to overturn a recent second-degree murder conviction. The Supreme Court of Canada based their decision to downgrade the conviction to manslaughter on the rationale that specific intent could not be substantiated:

"Murder is distinguished from manslaughter only by the mental element (intent) with respect to death . . . (The court) is presently of the view that it is a principle of fundamental justice that a conviction for murder cannot rest on anything less than proof beyond a reasonable doubt of subjective foresight (specific intent)" (as cited in Still, 1988).

Fincham and Bradbury (in press a) insist that intent must be retained as a distinct dimension for assessing attributions in close relationships due to its critical role in determining responsibility in this context. Doherty (1981a) also recognizes that an *involuntary* attribution diminishes the sense of responsibility and therefore of blame with respect to a given behavior. ¹

There appears to be substantial amount of evidence to support the acceptance of a motivational dimension similar to Passer's et al. (1978) attitude dimension (Fincham, Beach & Nelson, 1987; Hortacsu & Karanci, 1987; Vala, Leyens, & Monteiro, 1987; Wimer & Kelley, 1982). Doherty (1981a) acknowledges

¹Doherty's *voluntary* versus *involuntary* dimension is identical to the *intentional* versus *unintentional* dimension discussed elsewhere in the literature.

that his *intent* dimension is very similar to the *attitude* dimension pinpointed by Passer et al. (1978). His understanding of intent, to be distinguished from *intentionality* as discussed previously, is a dimension "ranging from very positive or helpful through neutral to very negative or destructive" (Doherty, 1981a, p. 6). Fincham, Beach and Nelson (1987) argue that responsibility dimensions cannot be overlooked, especially in the realm of intimate relationships where responsibility judgements have such important clinical implications. Indeed, they found that responsibility attributions were even more important than causal attributions in differentiating distressed from nondistressed spouses. Their most recent version of the Marital Attribution Style Questionnaire includes both responsibility dimensions discussed here: *intentional* versus *unintentional* and *positive* versus *negative attitude* toward partner (Fincham, Beach, & Nelson, 1987).

Patterns of Attributions

Attributional biases. There are frequent references in the literature to various attributional biases which involve a selective search for causal explanations (Kelley & Michela, 1980). Jones and Nisbett (1972) first highlighted the important role of attributional biases in interpersonal relationships when they discussed the divergency of actor and observer causal perceptions. They stated their hypothesis as follows: "There is a pervasive tendency for actors to attribute their actions to situational requirements, whereas observers tend to attribute the same actions to stable personal dispositions" (Jones & Nisbett, 1972, p. 80). They identified two major categories of factors as likely to contribute to these differences: a) cognitive factors, such as availability of information and perceptual differences; and b) motivational factors, including concerns about self-evaluation and self-presentation.

Kelley and Michela (1980) concluded that the majority of studies to date confirmed Jones and Nisbett's (1972) hypothesis. More recent evidence has been less persuasive and the results often contradictory. Some of these studies appear to support certain actor-observer divergences, although not along the same lines originally suggested by Jones and Nisbett. For instance, some studies have indicated the existence of an egocentric bias with actors attributing a greater responsibility for both positive and negative activities to self than to partner (Ross & Sicoly, 1979; Thompson & Kelley, 1981). Kyle and Falbo (1985) concluded that marital stress influenced the actor-observer bias with married couples. They found that participants in low stress marriages explained their own positive behavior more dispositionally than participants in high stress marriages. Jacobson, McDonald, Follette, and Berley (1985) found that distressed married couples tended to attribute their partner's negative behavior to internal factors while nondistressed couples were more likely to attribute their partner's positive behavior to internal factors. Lavin (1987) discovered a tendency for nondistressed spouses to attribute their partner's positive behavior to internal factors. Actor-observer divergences similar to those predicted by Jones and Nisbett (1972), were uncovered in this study but were accounted for by males only. Fichten (1984) found evidence to support a self-serving bias in actors and observers but no *actor-observer bias* per se was found. Osberg and Shrauger (1986) found that participants made stronger attributions to dispositional factors when considering future as opposed to past behaviors. Fincham, Beach, and Baucom (1987) also did not find evidence for actor-observer differences, but discovered that "distressed participants, relative to their nondistressed counterparts, made more destructive attributions for their partner's behavior (they saw causes as more global, inferred less positive intent and more selfish motivation, and considered the behavior less praiseworthy" (p. 744).

It appears that there may be several factors which impact attributional biases in addition to the cognitive and motivational variables identified by Jones and Nisbett (1972): valence of behavior, gender, stress in the relationship, and time orientation (future versus past). Fincham, Beach, and Baucom's (1987) conclusions appear justified in light of the current research in this area: "It therefore appears that the conditions under which there is a pervasive tendency to attribute another's actions to stable personal dispositions while attributing one's own similar action to situational requirements is actually more complicated than Jones and Nisbett (1972) have suggested" (p. 746). In spite of the disparity in the research concerning the actor-observer hypothesis, there appears to be general support for the existence of attributional biases. Evidence for these biases is especially prominent in the literature related to attributions in marital relationships (Fincham & Bradbury, in press b).

Attributional style. Closely related to the concept of attributional bias is that of *attributional style*. Abramson, Seligman, and Teasdale (1978) first suggested that an attributional style consisting of global, stable, and internal attributions for negative events produced "depression proneness, perhaps the depressive personality" (p. 68). Peterson and Seligman (1984) view attributional or *explanatory* style as a trait because of its consistency across time (stable) and situations (global). The Attributional Style Questionnaire was developed to measure individual differences across the three dimensions identified in their reformulated learned helplessness model of depression.

Fincham and colleagues (Fincham, 1985b; Fincham, Beach, & Nelson, 1987; Fincham & O'Leary, 1983) have applied this model to marital relationships and discovered a variety of attributional style variables that distinguished distressed from nondistressed married couples. Fincham and Bradbury (in press b) confirm

that the "fundamental premise of these analyses is that differences in patterns of attributions for partner behaviors and relationship difficulties underlie variations in marital satisfaction" (p. 1). They conclude on the basis of a growing number of empirical studies that "relative to nondistressed spouses, distressed spouses view the causes of their partner's negative behavior as relatively enduring, global characteristics of their partners (i.e., they make internal, stable, and global attributions)" (p. 1). This particular combination of attributions comprises the identical attributional style identified by Abramson et al. (1978) to be representative of individuals who are at risk for depression.

However, the evidence for such an attributional style in marital relationships may not be as clear-cut as Fincham and Bradbury's (in press b) conclusion implies. Fincham (1985b) himself has acknowledged the contradictory nature of the results in support of group differences on the locus of causality and stability dimensions. Several studies have failed to produce the expected attributional style in distressed marital relationships (Fincham, Beach, & Baucom, 1987; Fincham, Beach, & Nelson, 1987; Fincham & O'Leary, 1983). The equivocal nature of this data necessarily precludes generalizing the attributional style fundamental to the learned helplessness and depression model to the domain of distressed married couples.

Furthermore, Cutrona, Russell, and Jones (1985) argued that the very idea of an attributional style which is consistent across events is conceptually suspect. They reasoned that the many situational factors which potentially influence a person's attributions would override the tendency to adopt a consistent style across situations. They examined the attributional style concept as operationalized by the Attributional Style Questionnaire by performing a validity and reliability analysis on this instrument. They found only weak evidence for the existence of

a cross-situational attributional style.

It is apparent that further research is required to clear up some of these discrepancies related to attributional patterns in marital relationships. It is possible that some of these difficulties may be based on a conceptually inadequate means of measuring attributions. The findings of Cutrona et al. (1985) suggest that attributional style may simply be an artifact of an instrument designed to measure what has already been hypothesized to exist. Further research would likely benefit from an instrument designed to measure situation-specific attributions in marital relationships.

Attributions in Close Relationships.

Recently, a number of theorists have begun to investigate the role that attributions play in marriage and intimate relationships (Berley & Jacobson, 1984; Doherty, 1981a, 1981b; Fincham & O'Leary, 1983; Newman & Langer, 1981; Orvis, Kelley, & Butler, 1976). It has been alleged that attribution theory must account for the fact that the quality of attributional activity likely varies significantly across the wide range of different contexts. This has been purported to be especially true of intimate relationships (Doherty, 1981a; Fincham, 1983; Holtzworth-Munroe & Jacobson, 1985; Newman, 1981a, 1981b).

Locus of causality studies. Much of the emphasis on attributions in intimate relationships has been on the locus of causality dimension. The relationship between locus of causality and marital satisfaction is somewhat unclear due to the contradictory nature of the research. Bugaighas, Schumm, Bollman, and Jurich (1983) found internal locus of control to be significantly related to marital satisfaction. ² The most satisfied couples made increasingly more internal

² Several of these studies confound *locus* and *control* by identifying this dimension as *locus of control*. Weiner (1979) recognized this difficulty and

attributions for each other's behavior. Mlott and Lira (1977) hypothesized that distressed married couples would tend to be characterized by an external locus of control. Their hypothesis was supported, but only for women. Doherty (1981c) also reported that marital dissatisfaction in wives was linked to the configuration of a relatively external wife and internal husband. Other studies have failed to provide evidence connecting the locus factor with marital satisfaction (Fincham, Beach, & Nelson, 1987; Fincham & O'Leary, 1983).

The tendency in many of these studies has been to consider all *external* attributions as having the same psychological meaning. Fincham (1985b) asserted that this *equivilance assumption*, which may rest on inappropriate conceptual distinctions, has led to a confusion regarding the properties of the locus of causality dimension. He used a locus measure designed to confront some of the conceptual difficulties resulting from the grouping together of all external factors (partner, relationship, and outside circumstances). He found that distressed spouses, relative to nondistressed spouses, were more likely to see their partner and the relationship as the source of marital difficulties; no differences were found for attributions involving the outside circumstances. He concluded that contradictory (prior) findings are at least partially due to this failure to distinguish external causes on the locus dimension.

Two studies established a relationship between locus and behavior valence in differentiating distressed and nondistressed married couples. Jacobson et al. (1985) failed to locate an overall locus difference between distressed and nondistressed couples, but they did ascertain that distressed spouses viewed their partner's negative behavior as internal while nondistressed spouses tended to perceive their partner's positive behavior as internal. Fichten (1984) found that

?(cont'd) proposed two distinct dimensions: *controllability* and *locus of causality*.

spouses in distressed marriages attributed their partner's negative behavior and their own positive behavior to more internal causes. They claimed evidence for a self-serving bias in distressed couples on the basis of these results.

Attributional biases in close relationships. Kyle and Falbo (1985) uncovered evidence in support of an attributional bias among spouses in distressed marriages: these spouses explained their partner's positive behavior more situationally and their negative behavior more dispositionally. Furthermore, they concluded that marital stress was positively related to the degree of discrepancy between attributions made for oneself and one's spouse. Fincham, Beach, and Baucom's (1987) results supported a positive attributional bias for nondistressed couples. These spouses made more benign attributions for their partner's behavior than for their own. In contrast, distressed spouses made less benign attributions for their partner's behavior than for their own, suggesting a negative attributional bias for these couples.

Thompson and Kelley (1981) found support for the generalizability of an attributional bias in close relationships. They alleged that there was a consistent tendency to take more responsibility for events and activities in a relationship than a partner was willing to grant, for both positive and negative behaviors over a broad range of activities. These results confirmed the findings of an earlier study by Ross and Sicoly (1979).

Responsibility attributions in close relationships. Responsibility was demonstrated to be an important factor in two studies. Madden and Janoff-Bulman (1981) found that women who blamed their husbands less than themselves for marital conflict were more satisfied with their marriages. Fincham, Beach, and Nelson (1987) demonstrated that distressed spouses perceived negative

partner behavior to be more global, negative in intent, selfishly motivated, and blameworthy than did nondistressed spouses. The inverse pattern was evident concerning positive spouse behavior. They concluded on the basis of these findings that "expanding the focus of research on the attributions that underlie marital problems to include judgements of responsibility as well as 'scientific' judgements of causality is likely to lead to a more adequate understanding of marital dysfunction" (p. 82).

Clinical Applications of Attribution Theory.

Clinical relevance in marital relationships. The hypothesis that marital satisfaction is in some way related to attributions has received some support in the literature. However, the nature of this relationship remains unclear. The degree and/or direction of causality between these two variables has not yet been demonstrated. Fincham and Bradbury (in press b) suggest that the fundamental premise that pervades the study of attributions in close relationships is that attributions are *causally* related to marital satisfaction. They recognize that until empirical data are available to verify that attributions influence marital satisfaction, "there is no compelling reason why they, rather than any other cognitive correlate of marital satisfaction, should be the target of therapeutic intervention" (p. 3).

In an attempt to provide a more convincing test of the relationship between attributions and marital satisfaction, Fincham and Bradbury (in press b) conducted a one-year longitudinal study involving 34 married couples. Their results indicated that wives' attributions predicted marital satisfaction but that marital satisfaction did not predict attributions for either wives or husbands. This evidence points to a possible causal relationship in which attributions influence marital satisfaction and not vice versa. However, the correlational design of the

study precludes a definitive causal interpretation due to the potential influence of an unmeasured third variable.

An important variable in close relationships is the degree of attributional conflict between partners. Orvis, Kelley, and Butler (1976) discovered that instances of attributional conflict in young couples were overwhelmingly characterized by negative events. They proposed that the attribution process may be "originally learned and subsequently maintained primarily in the social context of justification of self and criticism of others" (p. 379). The egocentric character of attributional conflict is described in several other studies dealing with intimate relationships (Lavin, 1987; Ross & Sicol, 1979; Sillars, 1981; Thompson & Kelley, 1981). Doherty (1981a) emphasizes the important function of attributions in family conflict and contends that a lot of *marital* conflict is "expressly concerned with disagreement over attributions about each other's behavior" (p. 12). Kyle and Falbo (1985) found that marital stress was related to the degree of discrepancy between attributions made for one's own behavior and attributions made for one's spouse's behavior. This evidence suggests that attributions may have special significance for therapists who are concerned with resolving conflict in marriage and family relationships.

Attributions in family systems theory. Several researchers have recognized the important link between attribution theory and family systems theory (Doherty, 1981a; Newman, 1981b; Fincham, 1983; Berley & Jacobson, 1984). An important concept in the family therapy literature involves the notion that cyclical sequences of interactive behavior are *punctuated* in such a way as to determine the causes of the behavior (Watzlawick, Weakland, & Fisch, 1974). Discrepancies in the way people punctuate these events lead to the assumptions of *madness* or *badness* which are believed to be at the root of many family difficulties

(Watzlawick, Beavin, & Jackson, 1967). These punctuational differences typically become habitual and are considered to be central to problem maintenance.

Bernal and Golann (1980) operationalized punctuational differences in married couples by measuring the causal and responsibility attributions of a sample of married couples. Their study indicated that punctuational differences were associated with the degree of distress in relationships: individuals in distressed relationships were more likely to attribute full responsibility to their partners while individuals in nondistressed relationships tended to share the responsibility with their partners.

The therapeutic technique of *reframing* is derived from systems theory and is used to alter perspectives regarding the causes of behavior (Watzlawick, Beavin, & Jackson, 1967). Reframing usually emphasizes *positive connotation* (Breit, Im, & Wilner, 1983). This technique enables people to consider alternative conceptualizations of a problem which, in turn, helps to alleviate accusations of blame. Fincham (1983) recognizes that "the technique of reframing, while not couched in attribution terms, in effect constitutes a form of reattribution that enhances a sense of mastery over the problem" (p. 196).

Modifying attributions. The application of attribution theory in a clinical setting necessarily involves a means of modifying the types of attributions that are related to therapeutic concerns. Furthermore, the effectiveness of such reattribution interventions must be adequately demonstrated. Forsterling (1985) reviewed 15 attributional training studies and discovered that these programs typically produced changes on both cognitive and behavioral levels. However, the majority of these studies involved reattributing failure in academic performance to lack of effort. The generalizability of these results to clinical settings other

than academic achievement is yet unsupported.

Specific programs which have applied attribution theory to marital therapy have only recently appeared in the literature (Berley & Jacobson, 1984; Epstein, 1982). However, there are no data to warrant the implementation of these reattribution interventions in a therapeutic context. Harvey and Galvin (1984) conclude in their review on the clinical implications of attribution theory that "the case for the application of attribution ideas to clinical phenomena still is quite incomplete" (p. 30). Outcome data in support of a reattribution type approach is virtually nonexistent except in the research on reframing - research which appears to be limited to studies involving depressed participants (Beck & Strong, 1982; Feldman, Strong, & Danser, 1982; Kraft, Claiborn, & Dowd, 1985). It appears, then, that conclusions regarding the efficacy and generalizability of attributional training approaches in therapy still awaits further research. Such research must involve clinical populations and evaluate the specific contribution of the reattribution component of the intervention to the therapeutic outcome (Fincham, 1983).

The Measurement of Attributions.

Outcome research on the effectiveness of reattribution interventions must include the careful assessment of attributional change. Furthermore, accurate assessment of attributions must necessarily occur in order to determine the degree to which attributional processes are related to therapeutic concerns in the first place. An instrument is required that is capable of accurately measuring the attributional processes of participants in the particular clinical setting of interest. Rotter's (1966) I-E Scale represented the first systematic attempt to measure attributions. Researchers soon realized, however, that a complete assessment of attributional activity must account for dimensions other than the internal-external

locus of control dimension highlighted by Rotter. More recent attribution measures were distinguished from Rotter's I-E Scale primarily by the additional dimensions that were identified and the particular behavioral context that was emphasized. Three instruments that have been developed to date will each be considered in turn.

The Attributional Style Questionnaire. The Attributional Style Questionnaire was developed to assess an individual's perceptions of the causes of 12 hypothetical achievement and affiliative events (Peterson et al., 1982). The questionnaire is based on the reformulated learned helplessness model of depression which holds that the attribution of negative events to internal, stable, and global factors predisposes a person to the onset of depression (Abramson et al., 1978). The Attributional Style Questionnaire yields separate scores for each of three dimensions (locus, stability, and globality) and composite scores that sum across these dimensions. *Attributional styles* are calculated separately for positive and negative events. The authors concluded that the internal consistency and stability of its composites seemed satisfactory, but expressed some concern regarding the discrimination between the individual dimensions (Peterson et al., 1982).

The Marital Attribution Style Questionnaire. The Marital Attribution Style Questionnaire is an instrument patterned after the format of the Attributional Style Questionnaire, but strictly for use in marital relationships (see Fincham, Beach, & Nelson, 1987). For each of twelve hypothetical spouse behaviors, the respondent is requested, as in the Attributional Style Questionnaire, to write down the one major cause for the behavior. Causal judgements are obtained by having the individual rate the cause on the locus, stability, and globality dimensions. Respondents are also required to respond to three questions involving

the following responsibility attribution dimensions: positive versus negative intent, selfish versus unselfish motivation, and worthy of blame versus praise. In addition to these attribution questions, individuals must rate the impact of the hypothetical event on their feelings and determine their likely behavioral response.

This instrument has undergone several revisions. The most recent version substitutes a Lickert scale for the semantic differential scale used in the previous two versions (Fincham, 1987). In addition, the intermediate step of writing down the major cause for the behavior has been eliminated. Respondents are required to answer the questions in direct response to the hypothetical event provided. The Marital Attribution Style Questionnaire is currently in the stages of validation.

The Causal Dimension Scale. The Causal Dimension Scale was developed by Russell (1982) to measure how individuals perceive the causes for success and failure in achievement situations. In contrast with the two attributional style instruments described here, the Causal Dimension Scale is designed to measure causal perceptions in a particular situation. Therefore, hypothetical events are not provided to the respondent. There is no attempt made to measure for an attributional style across several events.

The Causal Dimension Scale consists of nine questions; three equivalent questions are used to assess responses on each of the three dimensions. This instrument is based on an achievement model and utilizes the same three dimensions identified by Weiner (1979): locus of causality, stability, and controllability. A three mode factor analysis confirmed the three dimensional structure of the instrument. It was demonstrated that all three subscales were

reliable and valid (Russell, 1982). However, Russell readily acknowledges that the validity of this scale needs to be established in other settings prior to being used outside of an achievement context.

A comparison of methodologies for measuring attributions. Validation studies subsequent to the initial development of the Causal Dimension Scale have provided additional support for the use of this instrument in measuring attributions (McAuley & Gross, 1983; Russell, McAuley, & Tarico, 1987; Watkins, 1986). Despite the evidence favouring the validity of this instrument, several studies have pointed to some difficulties with the controllability subscale. The level of internal consistency for the controllability dimension is below that which is acceptable for an instrument used in research contexts (Russell, McAuley, & Tarico, 1987). Similar findings were presented by McAuley and Gross (1983) and Watkins (1986).

Evaluation of the three items comprising Russell's (1982) controllability subscale presents some possible explanations for this lack of reliability. Although Fincham and Bradbury (in press a) differentiate causal and responsibility attributions, no such distinction is made by Russell in that both types of attributions are represented on the one controllability subscale. Items referring to controllability, intentionality, and responsibility are all presented as conceptually equivalent items representing one dimension. The proposed solution by Russell and colleagues (Russell et al., 1987) is to create additional controllability items. However, a more likely remedy would be to separate the inappropriate items (intent and responsibility) from the controllability scale and develop alternative scales suitable for the dimensions represented by these items. Weiner (1984) acknowledges that in some circumstances intentionality and controllability covary. However, he concludes that the general lack of independence between these two

dimensions lends support to the classification of these dimensions under the common category of *responsibility*. This conclusion appears to be somewhat premature due to the questionable internal consistency of these three items.

It appears that a reconceptualization of the controllability dimension is required before the Causal Dimension Scale is suitable for use in both research and clinical settings. Although the Attributional Style Questionnaire (Peterson et al., 1982) and the Marital Attribution Style Questionnaire (Fincham, 1987) have been developed for use in the context of social relationships, there is a major limitation shared by these two instruments which may preclude their suitability for clinical use. Attributions are perceived by Peterson et al. (1982) and Fincham, Beach, and Nelson (1987) to be consistent across a variety of situations. However, the preceding discussion on attributional style has placed in doubt the legitimacy of accepting such a cross-situational consistency in attributions.

In spite of the apparent weak reliability of the controllability subscale, the Causal Dimension Scale appears to be the more appropriate assessment tool for a clinical setting than either the Attributional Style Questionnaire and the Marital Attribution Style Questionnaire. The attribution style construct upon which the latter two instruments are founded, is conceptually suspect. This is demonstrated by the lack of discriminant validity of the three dimensions on the Attributional Style Questionnaire across different situations (Peterson et al., 1982). This was also apparent in a study done by Cutrona, Russell, and Jones (1985) who found that the reliabilities for the Attribution Style Questionnaire were too low, even for experimental use of the measure. Furthermore, their data provided only weak support for the cross-situational consistency of attributions, even when a subset of the most consistent participants was examined. In conclusion, the format used by the Causal Dimension Scale represents the most promising possibility for

developing a situation-specific attribution measure suitable for use with married couples in a clinical setting.

Restatement of Research Goals

In concluding this review of the literature, the specific research goals to be addressed in this study will be restated. There are as follows:

- a) To develop an instrument specifically designed for measuring the attributions of people involved in close relationships.
- b) To estimate the reliability of this instrument.
- c) To generate data investigating the validity of this instrument.

CHAPTER III

METHOD

Participants

One hundred and sixty eight undergraduate students (31 males and 137 females) from the Education Department at Simon Fraser University served as participants; 114 participants were single, 35 were married, 11 were living with their partners, 2 were separated from their partners, 5 were divorced, and 1 was a widow. The average age of the participants was 24.9 years.

A letter describing the study and requesting the use of classtime was distributed to each of the professors in the Education Department. Two professors teaching undergraduate classes responded favorably to this solicitation, providing a participant pool of sufficient size to meet the requirements of the study. Although classtime was provided for all of the participants to respond to the questionnaire, the length of the questionnaire required some students to remain beyond the end of the class period to complete it. An incentive was provided in that students were informed that completing the questionnaire would insure their eligibility to receive a complete account of the results of the study. However, these time restrictions likely contributed to the fact that approximately 20 students failed to complete the questionnaire, reducing the participant pool by 11% to the final total of 168 participants.

Test Development

An extension of the Causal Dimension Scale. In many aspects, this study represents a replication and extension of Russell's (1982) Causal Dimension Scale (CDS). Some important design features of this study have been directly borrowed from Russell. However, there are two important differences between the two

studies. First, the **CDS** was developed to assess causal perceptions in an achievement setting. The current study involves the development and validation of the Causal Dimension Scale for Close Relationships (**CDSCR**), an instrument designed to assess causal perceptions in the context of close relationships. Secondly, this emphasis on attributions in close relationships necessitates the addition of several causal dimensions which are relevant to this context. As a result, the **CDSCR** is considerably longer than the **CDS**. Some of the design differences have been implemented in response to this increased length.

Selection of dimensions. An instrument designed to measure attributions in close relationships must utilize the attributional dimensions which are meaningful in this context. Weiner (1979) and Russell (1982) have emphasized the *locus of causality*, *stability*, and *controllability* dimensions in the realm of achievement motivation. There is support in the literature for including the following additional dimensions when focusing on interpersonal attributional activity: *specificity* (Abramson, Seligman, & Teasdale, 1978; Fincham, 1985; Fincham, Beach, & Nelson, 1987; Flett et al., 1987), *intentionality* (Fincham & Bradbury, in press a; Passer, Kelley, & Michela, 1978; Weiner, 1984), and *attitude toward partner* (Doherty, 1981a; Fincham, Beach, & Nelson, 1987; Hortacsu & Karanci, 1987; Passer et al., 1979; Vala, Leyens, & Monteiro, 1987; Wimer & Kelley, 1982).

An additional modification to Russell's (1982) dimensional categories involved a redefinition of the *locus of causality* dimension. Instead of regarding all external causes as equivilant, causes pertaining to the circumstances have been distinguished from causes residing in other people. Two separate dimensions have been created in order to address this important distinction: *self-other* and *self-circumstances*. As a result, there are a total of seven attributional dimensions that are measured by the **CDSCR** (see Appendix A for a complete list and

description of these dimensions).

These dimensions were added in an attempt to more adequately encapsulate the richness of interpersonal attributional processes. However, there is a complicating disadvantage in that some of these dimensions are no longer truly bipolar nor are they completely orthogonal. The *self-other* and *self-circumstances* dimensions are not bipolar since the semantic differential questions representing these dimensions do not provide for all possible responses. For instance, the *self-other* questions do not allow for a circumstances response. Furthermore, the **CDSCR** contains two non-orthogonal dimensions which do not freely covary with all other dimensions: *self-circumstances* and *intentionality*. *Self-circumstances* is non-orthogonal in that an attribution which has a circumstances locus of causality is not likely to have *attitude* or *intentionality* dimensions. Similarly, *intentionality* does not freely covary with controllability. Although it is possible to conceive of an attribution which is both intentional and uncontrollable (as in a compulsive murderer), these situations, if they exist at all, are too unusual to be seriously considered. However, attributions which are controllable and unintentional (as in all acts of negligence or forgetfulness) are much more common and were included in the validation study.

Selection and development of the scale format. Russell (1982) selected the semantic differential scaling format (Osgood, Suci, & Tannenbaum, 1957) for the **CDS**. The suitability of such a scale is evident in that many of the attributional dimensions are inherently bipolar in nature i.e., internal-external, stable-unstable, controllable-uncontrollable, and intentional-unintentional. The majority of the items on the **CDS** are anchored by terms which are semantically opposite to one another (excluding items on the *locus of causality* dimension). The selection of the semantic differential scale for this study also facilitated the development of

bipolar items for the new dimensions. Terms such as planned–unplanned and selfish–unselfish were selected according to the degree to which they were likely to be judged as semantically opposite to one another. Each of the seven attributional dimensions are represented by three equivilant semantic differential items resulting in a total of 21 questions on the **CDS**CR (see Appendix B).

This scale format was appropriate for the majority of items on the measure. However, the use of non–orthogonal dimensions created a new problem. For the causes in which non–orthogonal dimensions were a factor, not all of the seven items would be relevant to the respondent. For example, once a participant determines that a particular cause resides in the circumstances (a non–orthogonal dimension), the *intentionality*, *attitude*, and *self-other* items become irrelevant. Although Russell (1982) avoided some of this difficulty by preserving the orthogonality of his dimensions, he did not resolve the dilemma faced by participants attempting to respond to a *self-other* item when the cause was clearly located in the circumstances. The decision was made to minimize such confusion by designating the middle number on the semantic differential scale as a neutral option. Participants were instructed to select the **3** when neither of the terms represented the cause they were evaluating. Fincham (1987) also includes a neutral option on his most recent version of the Marital Attribution Style Questionnaire, although the scale used on this revision is a Likert rather than a semantic differential scale.

Three additional revisions were made to the **CDS**. First, the poles of the three items representing each dimension are alternated on the **CDS**. For example, on the *locus of causality* dimension, the *internal* pole is located on the left for the first and third items and on the right for the second item. However, there is no attempt made to disguise this reversal since the order of the numerical

values are reversed along with the adjectives, presumably in an attempt to facilitate the ease of scoring. Although the poles are also alternately reversed in this study, the numerical values consistently progress from 1 on the left to 5 on the right for all of the items. Second, Russell (1982) attempted to subsume under the *controllability* dimension three items which represent dimensions that have been distinctly separated in the literature (*controllability*, *intentionality*, and *responsibility*). In the current study, *controllability* and *intentionality* are treated as separate dimensions. Only the *controllable* versus *uncontrollable* item from the CDS is maintained under the *controllability* dimension. The *intended* versus *unintended* item is subsumed under the *intentionality* dimension on the CDSCR while the *responsibility* item is discarded completely. Finally, a five point scale was substituted for the nine point scale used on the CDS. The final version of the CDSCR used in this study is contained in Appendix B.

Development of causal scenarios. In contrast to attributional *style* questionnaires (Fincham et al., 1987; Peterson et al., 1982) which assess the respondent's attributions in reference to hypothetical *events*, the CDS assesses the the respondent's attributions in reference to the actual *causes* of the event that have been identified by the respondent. Russell (1982) suggests that it is not appropriate to assess the causal dimensions of an *event*; causal dimensions must be assessed in reference to the identified *cause* of the event, otherwise a crucial step in the cognitive attributional activity of the participant is missed. This study follows the same logic used in the validation of the CDS and provides not only the event but also the purported cause of that event. Therefore, an important task in preparing the questionnaire for this study was the development of a list of causes which would operationalize all possible permutations of the seven attributional dimensions.

The list of 56 causal attributions developed for the questionnaire consists of the 32 attributions which exhaust all possible combinations of the orthogonal dimensions and the 24 additional attributions which combine the two non-orthogonal dimensions with the appropriate orthogonal dimensions. Each of these causes is matched with a suitable event and presented as a pair to the participant. These event-cause pairs are referred to as "scenarios" (see Appendix C for a list of these scenarios).

The overall purpose of this study is to determine the degree to which participants share similar perceptions of the causal statements which represent the various combinations of attributional dimensions. An important objective is to select causal statements which operationalize specific dimension combinations as accurately as possible. In order to assess the consistency of these perceptions, a questionnaire was developed to give participants the opportunity to respond to the **CDSCR** for each of the 56 cause-event scenarios. The validation of this questionnaire is the major task of this study.

The events to which the causal statements are attached are all of an interactive nature, with no specification provided as to which partner initiated the event. This insures that the *locus of causality* information is more appropriately contained in the cause than in the event. For example, there is an important difference between the following two events: a) we hugged each other, and b) my spouse hugged me. Since participants were specifically advised to rely solely on the information provided in the cause when giving their responses, it was considered advisable to restrict *locus of causality* information to the cause.

An important variable in attributional activity is the qualitative component of the event. Russell (1982) manipulated achievement outcome (success and failure)

and found a significant effect. Participants tended to view the causes of success as more internal, stable, and controllable than the causes of failure. Similar effects have been observed in attributions for positive (pleasureable) and negative (displeasureable) interpersonal events (Fincham et al., 1987; Harvey, Yarkin, Lightner, & Town, 1980; Holtzworth–Munroe & Jacobson, 1985; Jacobson, McDonald, Follette, & Berley, 1985) The outcome or *quality of event* variable has been introduced into this study by randomly assigning each of the 56 causes to either a pleasureable or a displeasureable event.

Instructions. The questionnaire represents a very challenging task for participants. A detailed set of instructions has been included at the beginning of the questionnaire to clarify the task for the participants and prepare them for the challenge (see Appendix D). Several examples were provided in an attempt to acquaint the participants with the event–cause scenarios. Furthermore, examples were included to explain and illustrate the use of the neutral option.

In addition to these more general instructions, three very specific directives were highlighted for the participants. First, participants were told to refer to the cause rather than the event when answering the questions. Although the event serves as a necessary referent for the cause, the participants were warned that the event is not in itself an attribution and the information it contains should not be confused or confounded with the more critical information conveyed by the cause. Second, participants were encouraged to imagine that the cause provided was the one that they had selected to best explain the associated event. This request was intended to stimulate the participant's cognitive involvement with the cause and facilitate his/her ownership of it. Harvey et al. (1980) concluded that attributional activity increases as participants become more involved in the social situation being considered. Finally, participants were

discouraged from expanding on the causal information provided in their search for a more complete explanation of the proposed event. Fincham (1983) notes that the cyclical nature of marital interaction is one of its important features and that attributional activity is merely a punctuation of a complex causal chain. There was a danger in this study that participants would not be satisfied with the causal information provided and instead create additional explanations to extend the causal chain in answering the questions.

Pilot studies and test revisions. Two pilot studies of the questionnaire were conducted in an attempt to strengthen the validity of the measure and improve the administration procedure prior to formal testing. Pilot #1 involved six participants in a procedure designed to closely approximate the actual setting to be used in the formal study. In addition to completing the questionnaire, the participants were asked to participate in a discussion period to evaluate the questionnaire and their experience with it. Pilot #2 was somewhat more informal and involved five participants. These pilot demonstrations helped to uncover some of the weaknesses in the project and led to a number of significant improvements. The most obvious difficulties occurred in the operationalization of the attributional dimension combinations. In Pilot #1 it became apparent that very few causes were viewed as completely uncontrollable. This problem was likely due in part to the fact that the participants were mostly counsellors who have learned to view the majority of psychological issues as changeable in a therapeutic context. Although significant improvements were evident in Pilot #2 along this dimension, it appears that this issue will not be completely resolveable, especially in a university population – a setting in which the average person has achieved success by exercising control over his/her life.

Improvements were achieved in Pilot #2 by increasing the consensus of participant perceptions on the *controllability*, *intentionality*, and *attitude* dimensions – the three most problematic dimensions subsequent to Pilot #1. Participant perceptions on the *self-circumstances*, *stability*, and *specificity* dimensions were similar across the two pilot studies in spite of the changes introduced in Pilot #2. Some difficulty was experienced in manipulating the *globality* dimension as participants were readily able to perceive "global causes" as global but rarely perceived "specific causes" as specific. Attempting to vary the qualitative aspect of the event also contributed to the difficulty in developing certain causal statements. It was particularly arduous to match a pleasurable event with a cause involving a negative attitude and vice versa.

An additional weak spot was defined by the participants in the discussion following Pilot #1. They found the task to be at times frustrating. They were able to attribute this frustration to the fact that the task was presented as a test with correct and incorrect answers rather than an inventory of perceptions. In response to this feedback, changes were made in the instructions to warn participants of the demanding nature of the task and to assure them that it was the questionnaire that was being evaluated in the end and not their performance.

Design

Due to the length of the questionnaire, it was felt that it was not realistic to expect participants to rate each of the 56 event-cause scenarios across all of the 21 semantic differential scale items in one session, i.e., 1176 responses per participant. Therefore, a multiple-matrix sampling design was employed in this study. The three questions from each of the dimensions were randomly assigned to one of three "equivalent" forms or versions. Although participants still rated all of the 56 scenarios, they were required to respond to only 7 as opposed to

all 21 questions per scenario. Each participant was randomly assigned to one of these three versions of the questionnaire. One additional randomization procedure was included to control for order effects: the order of the scenarios was randomized prior to administration.

This "item sampling" design is discussed by Bateson (1987) and Sirotnik (1974) and represents a practical solution to the restraints imposed by large scale assessments. The design utilized in this study has also been referred to as a partially nested design (Cronbach, Gleser, Nanda, & Rajaratnam, 1972) and may be represented by the following notation: $s \times (p:v)$. This notation is described as scenarios (s) crossed with versions (v) and with persons (p), persons nested within versions.

The reliability of the **CDSCR** was an important object of the analysis. The scores elicited on the three questions from each causal dimension (subscale) should be highly correlated. Due to the multiple-matrix design of this study (not all participants received all questions), traditional estimates of reliability could not be calculated and an alternate method was applied. The most appropriate approach in this case is based on generalizability theory. Generalizability theory evolved out of the recognition that classical test theory represented an inadequate assessment of the multiple sources of error in a measurement (Cronbach, Gleser, Nanda, & Rajaratnam, 1972). This theory enables the researcher to partition each source of error into separate estimated components of variance. The *generalizability coefficient*, the counterpart of the traditional "reliability coefficient", indicates the proportion of observed score variance that is due to the universe score variance. This is obtained by simultaneously estimating the multiple sources of variance in these scores. Generalizability coefficients were calculated for each of the seven subscales in the **CDSCR**.

The validity of the **CDSCR** was determined in a manner similar to that outlined by Russell (1982). The rationale behind this procedure is analogous to Campbell and Fiske's (1959) examination of convergent and discriminant validity using a multitrait-multimethod matrix. Each subscale in the **CDSCR** was subjected to a separate analysis of variance. For each analysis of variance, the scenarios were categorized according to the way in which they operationalized the particular dimension being addressed. For instance, when analyzing the *stability* subscale, the scenarios were divided into stable and unstable causes.

The *convergent* validity of the subscales was supported if a large effect was found for the causal dimension the subscale was designed to measure. For example, stable causes should produce significantly higher ratings on the stability subscale than unstable causes. Furthermore, each subscale should also have *discriminant* validity. The stability subscale should not also differentiate between controllable and uncontrollable causes or between global and specific causes. However, it was expected that the discriminant validity of some of the subscales would be compromised due to the use of non-orthogonal dimensions. In addition to performing separate analyses of variance on the seven subscales, analyses of variance were also performed on the 21 individual questions. In this way, the validity of each of the questions was also assessed.

Procedures

One of the three versions of the questionnaire was randomly assigned to each participant. The questionnaires were distributed with directions to read the written instructions at the beginning of the questionnaire. The participants were then told to answer the three demographic questions on the front page and not to place their name on the paper in order to preserve confidentiality. A set of verbal instructions was then read in order to clarify the written instructions.

These are reported verbatim in Appendix E. An overhead transparency was used to illustrate some of the examples contained in these instructions.

These preliminary procedures consumed approximately 15 minutes. The participants were then asked to begin the task and encouraged to continue until they had finished the questionnaire. They were instructed to return their completed questionnaires to the front of the classroom at which time they would be given the opportunity to write their name and address on a sheet of paper so that the results of the study could be sent to them.

CHAPTER IV

RESULTS

Reliability

Generalizability coefficients were calculated for each of the seven causal dimension subscales. Numerical estimates of the variance components were obtained by using the BMD P8V computer program. This program performs an analysis of variance for any complete design with equal cell sizes. Since the number of participants were unequally distributed across the three versions in the multiple-matrix design, balancing was achieved by randomly discarding participants to reduce the number in each cell to 52.¹ A *random* effects model was specified by treating all factors as random for the computer analysis (see Rentz, 1980). The analysis was repeated for each subscale, yielding seven distinct sets of variance components (see Table 1).

The appropriate formula for estimating the generalizability coefficients was developed by following the guidelines presented by Rentz (1980) for combining variance components. A *scoring function* (Formula 4.1) was developed to be used as a schematic for constructing the appropriate generalizability coefficient formula. The Y refers to the score and the X to the observation.

$$(4.1) \quad Y_v^{(vs)} = \sum_{sp} X_{vsp}$$

The Y subscript indicates that v (version) is the score from the measurement situation for which reliability estimates will be made. The summation sign Σ

¹There were originally 60 participants in the version 1 cell, 52 participants in version 2, and 56 participants in version 3. This means that after random elimination, the data were not identical to that used in conducting the validity phase of the analysis.

Table 1
Components of Variance and Generalizability Coefficients for the Causal Dimension Subscales

Source of Variance	Variance Components							
	Self-other	Self-circum	Stability	Globality	Control	Intent	Attitude	
Mean	8.98217	8.32335	8.00576	10.32929	12.03969	6.93527	10.04429	
V	-.00024	0.03337	0.01345	0.08732	0.01779	0.01432	0.01938	
S	2.41372	1.09845	1.17012	1.00820	0.66381	0.91290	0.97385	
P(V)*	0.01325	0.10874	0.11245	0.21922	0.28278	0.22326	0.06644	
VS	0.01292	0.07205	0.04863	0.00794	0.09581	0.02495	0.07973	
PS(V)	0.62270	1.46248	1.48831	1.66546	1.59929	1.52644	0.89198	
G Coeff.	.248**	.899	.802	.947	.717	.737	.874	

V - Version S - Scenario P - Person

*Parentheses are used in some notations to refer to factors which are nested. This particular variance component has P nested within V.

**See footnote on page 50.

subscripts indicate which factors (s - scenario and p - person) are involved in obtaining the score. X carries subscripts for each factor in the design. The superscripts on Y indicate which factors are actually *fixed* in the design.

Once the scoring function has been expressed, a generalizability coefficient formula can be constructed to estimate the reliability of the scores represented by the index of the scoring function. The variance components for each of the seven subscales were inserted into Formula 4.2 to produce the generalizability coefficients in Table 1.² The numerator represents the expected variance

(4.2)

$$p^2_{v^{(vs)}} = \frac{\sigma^2_v + \sigma^2_{vs}/56}{\sigma^2_v + \sigma^2_{vs}/56 + (\sigma^2_{vs}/56 + \sigma^2_{p(v)}/52 + \sigma^2_{ps(v)}/52 \times 56)}$$

of the *true* score while the denominator (containing both the numerator and the *error* component) represents the expected variance of the *observed* score.

²It is clear that the *self-other* G coefficient represents a significant departure from the remaining G coefficients. It is probable that this spurious result is largely due to the fact that a negative variance component was obtained for the component of interest - version variance. Cronbach et al. (1972) confirms that variance component estimates obtained by the procedures utilized in this study are not infrequently negative, and suggests that a plausible solution is to substitute a zero for the negative estimate. This is the procedure that has been implemented in calculating the G coefficient for the *self-other* subscale. Due to the very small size of this negative component, this procedure altered the number only to a very small degree. In any case, the extremely small size of this variance component, instead of contributing to a large G coefficient, as might be expected, essentially invalidated the formula (4.2) used to calculate this coefficient (by reducing the numerator to near zero). It is likely that this coefficient, in actuality, is much larger than .248, as suggested by the extremely low version variance component. However, this cannot be demonstrated by the procedures used in this study. Although there are more complex means of dealing with negative variance components (see Nelder, 1954; Tiao & Tan, 1965), these procedures extend beyond the scope of this study.

Validity

The validation of the **CDSQR** involved several important considerations. Of primary concern was the ability of each of the seven subscales to measure the dimensions which they represented. The convergent validity of a given subscale would be substantiated if there was a large main effect for the dimension it was designed to measure. The discriminant validity of this same subscale would also be supported if the effects from manipulating the remaining six dimensions were relatively small on this subscale. In addition, it was important to demonstrate that this instrument is equally valid for males and females, and for married and single participants. This was important considering the fact that the participant sample in this study was somewhat biased toward single female participants.

For the purposes of validating the individual subscales, each dimension was subjected to a separate analysis of variance across each of the seven subscales. This resulted in a total of 49 one-way analyses of variance being performed. For each of these analyses, the independent variable was represented by the two levels of scenarios that were manipulated for the dimension being considered. For example, the seven analyses of variance performed for the *stability* dimension required that the scenarios be divided into stable and unstable groups. It was hypothesized that this variation of the independent variable would produce a large main effect when the responses on the *stability* subscale were treated as the dependent variable. Such a large effect would support the convergent validity of this subscale by indicating that the participants perceived the stable and unstable scenarios as they were constructed. Discriminant validity would be supported if low effects were obtained on this subscale when the remaining six dimensions were manipulated as the independent variable. This would mean that

the subscale designed to measure *stability* would not also differentiate controllable from uncontrollable causes.

The data for each participant were aggregated such that the response on each item for each scenario was considered to be an independent observation. In this manner, it was possible for each participant to contribute anywhere from 32 to 56 data points to each of the analyses of variance, depending on the number of occasions that the dimension of interest was manipulated. ³ Therefore, the degrees of freedom for the error terms consisted of the number of participants multiplied by the number of occasions that the dimension of concern was manipulated. In very few cases, the data were missing for a particular item, resulting in a minor fluctuation in the degrees of freedom of less than .2 per cent.

The results of this analysis are reported in Table 2, along with the variance accounted for by each main effect (signified by ω^2). Although the F ratios and associated probabilities are also reported in this table, what is of special interest in this study are the ω^2 values which demonstrate the convergent and discriminant validity of the instrument. It is evident that the main effects for the majority of the seven subscales are appropriately large for their respective dimensions. This would appear to generally support the convergent validity of the instrument. On the *stability* subscale, it is clear that the questions representing this subscale adequately differentiate stable from unstable causes, as indicated by the large main effect. Discriminant validity is also supported for this subscale in

³Each participant contributed 32 data points toward the analysis for the *self-circumstances* subscale. Since this particular dimension is non-orthogonal, 24 scenarios were constructed with a *self* locus and only eight with a *circumstances* locus. The remaining 24 scenarios represented an expected neutral response for the occasions when the dimension was not manipulated. For the *globality* subscale, however, each participant contributed 56 data points to the analysis since this dimension was manipulated for all 56 scenarios.

that the stability main effect accounts for 34% of the variance in these items, while very little of the variance is explained by the other subscales. The convergent and discriminant validity results are similar for the *globality* and *attitude* subscales.

The remaining subscales — *self-other*, *self-circumstances*, *controllability*, and *intentionality* — depart from this pattern of clear discriminant validity. Manipulating the *self-other* dimension accounted for variance in both the *self-other* and *self-circumstances* subscales, while manipulating the *self-circumstances* dimension also accounted for variance in both of these subscales. This highlights the inability of these two subscales to discriminate from each other. However, it should be noted that these subscales are quite distinct from the remaining five subscales. A similar pattern was apparent when the *controllability* dimension was manipulated. This accounted for variance in the *controllability*, *intentionality*, and *self-circumstances* subscales, effectively decreasing the discriminant validity of the *controllability* subscale. Manipulating the *intentionality* dimension led to a relatively large main effect on the *intentionality* subscale, but also explained some variance on the *controllability* subscale. However, the discriminant validity of the *intentionality* subscale was not weakened to the same extent as it was for the *controllability* subscale.

In terms of convergent validity, the majority of the subscales demonstrate appropriately large ω^2 values. Of some concern, however, is the comparatively low ω^2 on the *controllability* subscale. Therefore, the convergent validity of the *controllability* subscale would appear to be somewhat in question.

In an additional analysis procedure, each of the 21 questions was subjected to a separate analysis of variance. The procedures followed in performing these

Table 2
Analysis of Variance Results for the Causal Dimension Subscales

Scale	Effect															
	Self-other		Self-circum		Stability		Globality		Control		Intent		Attitude			
	F	ω^2	F	ω^2	F	ω^2	F	ω^2	F	ω^2	F	ω^2	F	ω^2		
Self-other	28393.68	.78	3973.22	.42	13.11	.00	<1	.00	<1	.00	<1	.00	<1	.00	21.16	.00
Self-circum	2297.23	.22	2516.24	.32	124.53	.01	303.35	.03	325.85	.03	142.58	.02	3353.18	.29	<1	.00
Stability	1.16	.00	9.18	.00	4741.16	.34	201.60	.02	<1	.00	22.43	.00	41.62	.01	41.62	.01
Globality	<1	.00	14.13	.00	345.14	.04	3057.62	.25	8.19	.00	27.92	.00	1.58	.00	1.58	.00
Control	52.79	.01	386.08	.07	10.36	.00	5.02	.00	2159.34	.19	623.58	.07	25.95	.00	25.95	.00
Intent	27.40	.00	76.38	.01	32.08	.00	3.40	.00	937.23	.09	3353.18	.29	185.49	.01	185.49	.01
Attitude	14.39	.00	<1	.00	2.80	.00	4.06	.00	60.74	.01	<1	.00	6119.28	.44	6119.28	.44

*p<.05 **p<.01 ***p<.001

Table 3
Analysis of Variance Results and Variance Accounted for by Each Question

Scale	Effect																				
	Self-other			Self-circum			Stability			Globality			Control			Intent			Attitude		
	F	ω^2	F	ω^2	F	ω^2	F	ω^2	F	ω^2	F	ω^2	F	ω^2	F	ω^2	F	ω^2	F	ω^2	
Self-other																					
Located in you-partner	***	11575.42 .80	***	1598.67 .45	3.57 .00	<1 .00	<1 .00	<1 .00	<1 .00	<1 .00	<1 .00	<1 .00	<1 .00	<1 .00	<1 .00	<1 .00	<1 .00	<1 .00	**	8.53 .00	
Associated with partner-you	***	6195.86 .71	***	894.81 .35	5.52 .00	1.23 .00	<1 .00	<1 .00	<1 .00	<1 .00	<1 .00	<1 .00	<1 .00	<1 .00	<1 .00	<1 .00	<1 .00	<1 .00	**	7.61 .00	
Reflects an aspect of partner-you	***	11965.16 .81	***	1640.46 .48	4.26 .00	<1 .00	<1 .00	<1 .00	<1 .00	<1 .00	<1 .00	<1 .00	<1 .00	<1 .00	<1 .00	<1 .00	<1 .00	<1 .00	*	5.29 .00	
Self-circumstances																					
Associated with circumstances-you	***	325.17 .10	***	521.99 .21	59.80 .02	210.86 .06	202.55 .06	202.55 .06	202.55 .06	202.55 .06	202.55 .06	202.55 .06	202.55 .06	202.55 .06	202.55 .06	202.55 .06	202.55 .06	202.55 .06	***	89.95 .03	
Reflects an aspect of you-circumstances	***	928.52 .27	***	919.50 .36	46.29 .02	59.91 .02	94.44 .03	94.44 .03	94.44 .03	94.44 .03	94.44 .03	94.44 .03	94.44 .03	94.44 .03	94.44 .03	94.44 .03	94.44 .03	94.44 .03	***	53.24 .02	
Located in you-circumstances	***	1544.85 .36	***	1462.32 .45	23.55 .01	62.76 .02	54.64 .02	54.64 .02	54.64 .02	54.64 .02	54.64 .02	54.64 .02	54.64 .02	54.64 .02	54.64 .02	54.64 .02	54.64 .02	54.64 .02	***	15.14 .01	
Stability																					
Variable over time-stable	<1 .00	<1 .00	3.52 .00	1758.04 .35	16.73 .01	<1 .00	<1 .00	<1 .00	<1 .00	<1 .00	<1 .00	<1 .00	<1 .00	<1 .00	<1 .00	<1 .00	<1 .00	<1 .00	***	20.01 .01	
Momentary-constant	<1 .00	<1 .00	<1 .00	1239.14 .30	216.45 .07	14.16 .00	14.16 .00	14.16 .00	14.16 .00	14.16 .00	14.16 .00	14.16 .00	14.16 .00	14.16 .00	14.16 .00	14.16 .00	14.16 .00	14.16 .00	***	20.76 .01	
Permanent-temporary	<1 .00	<1 .00	9.77 .01	1798.57 .37	44.19 .01	3.74 .00	3.74 .00	3.74 .00	3.74 .00	3.74 .00	3.74 .00	3.74 .00	3.74 .00	3.74 .00	3.74 .00	3.74 .00	3.74 .00	3.74 .00	*	4.95 .00	
Globality																					
Influences just this event-many events	<1 .00	<1 .00	1.24 .00	125.14 .04	1029.01 .23	3.58 .00	3.58 .00	3.58 .00	3.58 .00	3.58 .00	3.58 .00	3.58 .00	3.58 .00	3.58 .00	3.58 .00	3.58 .00	3.58 .00	3.58 .00	***	5.84 .00	
Associated with many events-just this event	<1 .00	<1 .00	<1 .00	162.77 .05	1099.46 .27	13.08 .00	13.08 .00	13.08 .00	13.08 .00	13.08 .00	13.08 .00	13.08 .00	13.08 .00	13.08 .00	13.08 .00	13.08 .00	13.08 .00	13.08 .00	***	27.88 .01	
Affects just this event-many events	<1 .00	<1 .00	5.58 .00	75.99 .02	1021.30 .25	<1 .00	<1 .00	<1 .00	<1 .00	<1 .00	<1 .00	<1 .00	<1 .00	<1 .00	<1 .00	<1 .00	<1 .00	<1 .00	*	4.16 .00	

Table 3 (continued)
Analysis of Variance Results and Variance Accounted for by Each Question

Scale	Effect													
	Self-other		Self-circum		Stability		Globality		Control		Intent		Attitude	
	F	ω^2	F	ω^2	F	ω^2	F	ω^2	F	ω^2	F	ω^2	F	ω^2
Controllability														
Unchangeable-changeable	**	8.52 .00	***	91.12 .04	***	32.80 .01	<1 .00	<1 .00	***	786.71 .19	***	168.24 .06	***	60.37 .02
Controllable-uncontrollable	***	21.43 .01	***	109.11 .06	<1 .00	<1 .00	**	10.91 .00	***	1113.90 .28	***	415.11 .14	***	2.17 .00
Influenceable-Uninfluenceable	***	26.01 .01	***	204.75 .10	<1 .00	<1 .00	<1 .00	<1 .00	***	415.74 .12	***	110.65 .04	***	<1 .00
Intentionality														
Intended-Unintended	**	6.95 .00	***	21.21 .01	**	10.19 .00	2.93 .00	2.93 .00	***	219.56 .06	***	1292.74 .31	***	29.48 .01
Unplanned-planned	**	8.96 .00	**	7.27 .00	***	19.38 .01	<1 .00	<1 .00	***	445.79 .13	***	1283.40 .34	***	21.57 .01
Premeditated-not premeditated	***	12.15 .00	***	62.75 .03	*	5.30 .00	1.97 .00	1.97 .00	***	316.52 .09	***	865.81 .24	***	19.92 .01
Attitude														
Motivated by selfish concerns-unselfish concerns	**	7.90 .00		1.45 .00		1.12 .00	*	5.09 .00	*	6.64 .00		1.95 .00	***	1231.57 .30
Reflects good will toward another-ill will		3.10 .00		1.31 .00	**	7.47 .00	***	16.54 .01	***	13.55 .00	***	<1 .00	***	2775.44 .53
Reflects consideration-lack of consideration	*	4.00 .00		2.19 .00	*	2.05 .00	*	4.09 .00	***	51.62 .02	***	<1 .00	***	2860.04 .52

*p<.05 **p<.01 ***p<.001

analyses were nearly identical to those used in analyzing the validity of the seven subscales. However, at this stage, 147 separate one-way analyses of variance were conducted, one for each dimension across all 21 questions. These results along with the variance explained by each main effect are reported in Table 3.

As previously explained, this instrument involved the option of a neutral choice in instances where neither end of the semantic differential scale on a specific question was judged appropriate for the provided scenario. Since the neutral option represents an important feature of the design of this study, it would be useful to determine the degree to which participants appropriately utilized this option. The primary concern was to determine whether or not participants were able to distinguish, for example, intentional from unintentional causes. But were participants also able to determine when causes were *neither* intentional nor unintentional?

For the purpose of this analysis, the scenarios were categorized into either two or three groups, depending on the particular dimension being considered. Scenarios which represented a *circumstances* locus would be expected to elicit a neutral response on questions representing the *self-other*, *intentionality*, and *attitude* dimensions. Similarly, a neutral response on *self-circumstances* questions would be anticipated when a scenario represented an *other* locus. The neutral response was expected in these instances because the dimension of concern was irrelevant to the scenario being considered. Therefore, scenarios were categorized into three groups when the validity of these four subscales — *self-other*, *self-circumstances*, *intentionality*, and *attitude* — was being assessed. The analyses of variance results concerning differences among three groups are reported in Table 4 and appear to indicate that participants indeed utilized the neutral option

Table 4

Analysis of Variance Results for the Dimensions Categorized in Three Groups.

Group	Mean	Standard Deviation	Confidence Interval •	F Ratio	F Prob.
Self-Other*					
1. self	4.631	0.892	4.604 – 4.659	15991.8	.0000
2. other	1.353	0.854	1.327 – 1.380		
3. neutral	3.045	0.405	3.024 – 3.067		
Self-Circum*					
1. self	3.860	1.574	3.812 – 3.909	1957.05	.0000
2. circumstances	1.567	0.991	1.514 – 1.620		
3. neutral	2.337	1.260	2.299 – 2.376		
Intent*					
1. intentional	3.933	1.398	3.880 – 3.986	1680.93	.0000
2. unintentional	2.054	1.359	2.018 – 2.091		
3. neutral	2.327	1.466	2.248 – 2.405		
Attitude*					
1. negative	2.216	1.117	2.182 – 2.251	3278.31	.0000
2. positive	4.161	1.090	4.127 – 4.196		
3. neutral	3.109	0.815	3.065 – 3.152		

• 95 percent confidence interval

* all 3 groups significantly different $p < .05$

in a systematic and appropriate manner. In Table 4, the three groups under each dimension represent three different ways in which the dimension was manipulated across the 56 scenarios. For example, for responses on the *intentionality* questions, group #1 represents the mean rating by all participants on intentional causes, group #2 represents the mean rating on unintentional causes, and group #3 represents the mean rating on causes for which the *intentionality* dimension was not manipulated. Group #3, then, is the mean rating for instances in which a neutral 3 response was anticipated. A significant difference between all three groups would indicate that the participants clearly perceived the three levels of scenario manipulation for a given dimension.

It was deemed necessary to demonstrate the validity of the instrument for each of the participant groups represented in this study. The analyses of variance performed for each subscale with all participants in the sample (as reported in Table 2) were repeated separately for males, females, single, and married participants. These results are reported in Tables F-1, F-2, F-3, and F-4 respectively, and are contained in Appendix F. For each of these groups, the results were very similar to those found in Table 2. It appears that although some differences were apparent among the four participant groups, these differences had little impact on the overall validity of the instrument.

CHAPTER V

DISCUSSION

Discussion of Results

The purpose of the empirical component of this thesis was to demonstrate both the reliability and validity of an instrument designed to measure the attributional processes of people involved in close relationships. The results obtained from these two analyses are summarized and discussed.

Reliability. The results reported in Table 1 generally support the reliability of the **CDS**. The G coefficients reported in Table 1 represent the estimated reliability of each of the seven subscales of the **CDS**. These coefficients predict how similar the scores on each of the subscales would be if obtained again under the same or similar measurement conditions. The reliability of the *self-circumstances*, *stability*, *globality*, and *attitude* subscales are particularly strong. Although reliability estimates on the *controllability* and *intentionality* subscales are not as high, they compare with the reliability coefficient obtained by Russell (1982) for the *controllability* subscale¹ on the **CDS**. As discussed earlier, the low G coefficient for the *self-other* subscale on the **CDS** may primarily be an artifact of a negative variance component. Therefore, with the possible exception of the *self-other* subscale, it appears that the **CDS** is a relatively reliable instrument for measuring the attributions relevant to the domain of close relationships.

Validity. The results reported in Table 2 suggest that the *stability*, *globality*, and *attitude* subscales possess fairly strong discriminant validity. These results

¹Russell obtained an alpha coefficient of .730 for the controllability subscale on the **CDS**.

also show some confounding between the *self-other* and *self-circumstances* subscales and between the *controllability* and *intentionality* subscales.

The lack of independence between the two locus of causality subscales is not unexpected. Rather than representing two distinct dimensions, these two subscales essentially belong to one tripolar dimension: *self-other-circumstances*. It is not only expected but virtually required that these two dimensions fail to completely discriminate between each other, simply because each of the questions from both dimensions are anchored by a *self* pole on the semantic differential scale. Therefore, when a scenario represents a *self* locus of causality, the responses to the questions representing these two dimensions should be identical. Furthermore, the interdependency of these two dimensions is evident by the fact that the response to the first question presented to every participant (the *self-other* question) should determine, under ideal conditions, the response to the question which follows (*self-circumstances*). Whenever an *other* response is indicated on a *self-other* question, the appropriate response on the *self-circumstances* question would be a neutral one. The large main effects of these two subscales clearly distinguish them from the remaining subscales on the instrument. The prevailing pattern appears to strongly support the existence of a locus of causality dimension. What remains to be determined is the best way to conceptualize and operationalize this dimension(s).

The concerns related to locus of causality are not easy to resolve. Fincham (1985b) noted that many researchers have erred by conceptualizing locus of causality according to the *equivilance* assumption: this assumption represents the view that all *external* attributions share the same psychological meaning. A major aspect of this issue involves the difficulty of creating semantic differential items (essentially bipolar by definition) for what may actually be a tripolar dimension.

Russell (1982) actually evades this issue by accepting the equivilance assumption. He anchors his three locus of causality questions with a *you* option on the one end of the scale and then attaches three nonequivalent *external* options (*situation*, *outside of you*, and *other*) to the opposite end of the scale for each of the three questions. One of the difficulties with this approach is that with many scenarios, one of the three questions is non-answerable. The *you-situation* question provides no alternative for when the scenario has another person as the locus of causality. Similarly, the *you-other* question is inappropriate for a *situation* locus.

Fincham (1987) also recognizes this difficulty in developing the Marital Attribution Style Questionnaire. In his most recent revision of this instrument, he drops the semantic differential format in favor of the Likert scale. This may be the most appropriate way to resolve this particular problem, although at the cost of sacrificing what may be the ideal scale for those questions which are bipolar. The decision made in this thesis to provide a neutral option for instances when questions happened to be irrelevant, represents somewhat of a compromise between Russell's and Fincham's approaches.

The weak discriminant validity of the *controllability* subscale can be partially explained by the fact that *intentionality*, a non-orthogonal dimension, was not independently manipulated with *controllability* in many of the scenarios. The only instances in which these two dimensions were independently manipulated was when causes were controllable and unintentional (this occurred in 16 of the 56 scenarios). In all other cases, causes were either controllable-intentional or uncontrollable-unintentional. Therefore, the shared effect between these two dimensions may, at one level, be due to the decision not to independently manipulate these dimensions when developing the scenarios (something which may not have been possible even if desired). In addition, this weak discriminant

validity is partially due to the *self-circumstances* effect on the *controllability* subscale. This is similar to the problem experienced by Russell (1982) in validating the CDS. ²

Weiner (1984) based his decision to initially classify *controllability* and *intentionality* under the common category of *responsibility* on what he perceived as a general lack of independence of these two dimensions. However, a closer look at Table 2 shows that the *intentionality* subscale produced a larger main effect than the *controllability* subscale. Although Russell (1982) and Weiner (1979, 1985b) have traditionally categorized attributions relating to intent, responsibility, and control under the common category of *controllability*, ³ it is noteworthy that their domain of research is largely achievement motivation. Fincham and Bradbury (in press a), on the other hand, emphasize that the determination of responsibility in close relationships depends largely on the inference of intent. Their argument that intent must be retained for assessing attributions in close relationships appears to be supported by the results presented in Table 2. Furthermore, it is quite possible that *intentionality* is even more important than *controllability* for measuring attributions in this particular domain. It became apparent in developing the scenarios for the questionnaire used in this study that *controllability* was much more difficult to successfully manipulate than *intentionality*. The participants in the two pilot studies rarely viewed these causes as completely uncontrollable. The results in Table 2 suggest that *intentionality* may be the more relevant of

²Russell discovered that the confounding between these two dimensions was largely due to an inappropriate operationalization of the *controllability* subscale. He was able to resolve this difficulty by reconstructing the inadequate *controllability* questions.

³ Although Weiner (1984) at one point briefly categorized control and intent under the category of *responsibility*, he seemed to backtrack by later deciding that intent is not a valid attribution because it describes a motivational state rather than a cause per se (Weiner, 1985b). At this point, he seemed to return to his original *controllability* classification (Weiner, 1979).

the two dimensions for attributions made in the context of close relationships.

The prominence of the *intentionality* dimension is supported by the findings of Passer et al. (1978) in a study using multidimensional scaling to identify the most relevant attributions for negative interpersonal behavior. The two dimensions located by this procedure were *intentionality* and *attitude toward partner*. The results in Table 2 also indicate that, apart from the *self-other* subscale, the strongest main effect is represented by the *attitude* subscale.

Weiner (1983, 1984) recognizes that the selection of relevant attributional dimensions is largely dependent on which particular domain of behavior is being considered. Of the three dimensions typically identified in the context of achievement motivation (*locus of causality, stability, and controllability*), the results presented in Tables 1 and 2 provide the strongest support for the *locus* and *stability* dimensions. The evidence in support of the *controllability* dimension is somewhat less conclusive, although there is no solid basis for discarding this dimension at this time. However, in line with Weiner's statement, these results indicate that several other dimensions must be considered when assessing interpersonal attributions in close relationships. These findings are supported by the research which indicates that *globality* (Doherty, 1981a; Fincham, Beach, & Nelson, 1987; Peterson et al., 1982), *intentionality* (Fincham, Beach, & Nelson, 1987; Fincham & Bradbury, in press a; Passer et al., 1978), and *attitude* (Doherty, 1981a; Fincham, Beach, & Nelson, 1987; Passer et al., 1978; Wimer & Kelley, 1982) are important dimensions when assessing attributions in intimate relationships.

Limitations of Study

The validity results obtained in this study were somewhat dependent on the effectiveness with which the various causal dimensions were manipulated in the scenarios. Russell (1982) was able to refer to the literature in achievement motivation to develop a taxonomy of causes for academic success and failure, i.e., effort, ability, luck, mood, etc. However, no such taxonomy is available in the literature regarding attributions in close relationships. Moreover, it is substantially more difficult to manipulate seven dimensions simultaneously than three, and still develop meaningful and believable scenarios. As a result of these restrictions, the development of scenarios was somewhat more artificial than in Russell's (1982) study. In addition, there is evidence to suggest that the use of participant's real life events may more effectively tap attributional activity than hypothetical events (Gilbert, Jones, & Pelham, 1987; Harvey et al., 1980). In future research, it may be more desirable to look to the participants themselves to generate these scenarios.

The multiple matrix sampling design used in this study is based on the assumption that the response of a participant to an item is independent of the context in which the item is presented (Sirotnik, 1974). In other words, it was assumed that participants would respond to the sample of seven questions presented in each version of the questionnaire in the same way had they been embedded in the entire population of 21 items. There is no way to demonstrate that participants did respond in this manner, nor to predict the impact of exposing each participant to all three questions from each subscale (as would be the case if the questions were not sampled by a multiple-matrix procedure). The generalizability results that were obtained could have been affected by such a

reponse pattern.

The complexity of the questionnaire necessitated the use of an elaborate set of written and verbal instructions to prepare participants for the task (see Appendices D and E). The written instructions presented to each participant (Appendix D) included several examples of the types of responses that were expected on the questionnaire. These examples included explanations of the responses that were provided. The rationale for this procedure was to insure that the participants clearly understood the task awaiting them. The danger was that the participants would depend too heavily on the explanations provided and develop a response set in advance based on the expectations of the researcher. Every effort was made to standardize the instructions and not to provide too much direction, but the possibility remained that the responses of the participants were influenced in such a way as to contaminate the results obtained.

Although the multiple matrix sampling design served to reduce the length of the questionnaire by two thirds, several complaints were received regarding the length of the questionnaire. There was some evidence of careless and haphazard responses and several questionnaires had to be dropped from the analysis because they were incomplete, i.e., exhaustion may have been a factor.

Finally, it was assumed that participants were responding to the attributional (cause) component of the scenario rather than the event to which the attribution referred. Participants were clearly instructed to limit their responses to the information contained in the cause. However, evidence suggests that person's attributions are influenced by qualities of the event. Peterson and Seligman (1984) argue that the attributional style of certain depressed individuals is triggered by an experience with negative events. Research pertaining to close relationships also

shows that the "behavior valence" of an attributed event (positive or negative) is an important factor in differentiating distressed and nondistressed married couples (Fichten, 1984; Jacobson et al., 1985). Although the valence or quality of the event was manipulated in this study, the analysis of this variable was not performed as it was judged to be beyond the scope of this study.

Generalizability of Results

Possible limitations to the generalizability of the results obtained in this study are indicated by the following concerns. One of the major criticisms of research on *attributional style* is that there is an excessive use of participants in college populations relative to participants in clinical settings (Gong-Guy & Hammon, 1980; Harvey & Galvin, 1984). This same criticism may be directed at the present study. Caution must always be exercised in generalizing results found for college students to the population at large. Furthermore, it could be argued that the married students in this study would find the scenarios (which were based on hypothetical events in a marital relationship) to be more personally relevant than the single students, and that these results can be legitimately generalized only to college students that are married. However, the results in Tables F-3 and F-4 suggest that any differences in the responses of single and married participants on the questionnaire did not have any overall impact on the validity of the subscales for these two groups. Similarly, the validity of the subscales was equally substantiated for male and female participant groups (see Tables F-1 and F-2). These participants seem to share similar perceptions of attributional questions relevant to experiences common in close relationships, possibly due in part to the fact that scenarios typical of marital relationships may not be essentially different on an attributional level from those in other close relationships. Although there is good reason to believe that the **CDSCR** may

be equally valid for participants outside of a college setting, this instrument must be validated in other contexts before any firm conclusions of this nature can be made.

Clinical Applications of the Causal Dimension Scale for Close Relationships

The development of an instrument like the **CDSCR** is an important step in determining the role of attributional processes in the clinical problems presented by people involved in close relationships. There is an increasing amount of evidence to suggest a possible link between attributions and marital satisfaction (Doherty, 1981c; Fincham, Beach, & Baucom, 1987; Jacobson et al., 1985; Kyle & Falbo, 1985; Thompson & Kelley, 1981). However, there is no evidence available to demonstrate that the modification of attributions will predict a positive therapeutic outcome. Fincham and Bradbury (in press b) suggest that there is no reason why attributions should be the target of therapeutic intervention until empirical data is available to verify that attributions influence marital satisfaction. The **CDSCR** provides an opportunity to assess the degree to which the modification of attributions predicts enhanced relationship satisfaction.

However, before this concern is addressed, it is necessary to first demonstrate that attributions can, in fact, be successfully altered in a therapeutic setting. When the effectiveness of attributional retraining procedures have been demonstrated, it has typically involved reattributing failure in academic performance (Forsterling, 1985). The literature in attribution theory does not contain a proven method of altering attributional processes in the context of close relationships. However, the technique of *reframing*, as portrayed in family systems theory literature, represents a type of re-attribution intervention which has been used effectively to help clients to consider alternative conceptualizations of non-academic clinical problems such as depression (Conoley

& Garber, 1985; Feldman, Strong, & Danser, 1982; Kraft, Claiborn, & Dowd, 1985). Reframing is commonly used in treating relationship problems, especially in family therapy (Watzlawick, Beavin, & Jackson, 1967; Watzlawick, Weakland, & Fisch, 1974; Minuchin & Fishman, 1981). If further research indicates that a successful reframing intervention is related to attributional change, the **CDSCR** will then present the researcher with a tool for measuring the effectiveness of a reframe. Moreover, the **CDSCR** may also provide a means of assessing the cognitive processes of the client who responds favourably to a reframe.

Conclusions and Recommendations

The **CDSCR** is the first instrument of its kind developed for use in a clinical setting for assessing the attributions of specific relationship problems. Unlike the Marital Attribution Style Questionnaire (Fincham, 1987), the **CDSCR** allows the client to answer the questions in direct reference to the particular problem and problem attribution that have been identified.

However, in spite of its potential clinical use, the greatest contribution of the **CDSCR**, at its current stage of development, is most likely to be realized in research involving the attributions of people involved in close relationships. Before a more extensive clinical emphasis on attributions is warranted, the clinician must first have evidence that it is possible to modify attributions and that modifying attributions in the context of close relationships will have an impact on relationship satisfaction. The **CDSCR** presents a viable means of addressing both of these important concerns. Prior to the clinical use of the **CDSCR**, the instrument will have to be validated in a clinical setting.

The validity of the **CDSCR** has received initial support. Each of the attributional dimensions measured by the **CDSCR** appears to be distinguishable in

the domain of close relationships. Further investigation is required, however, to support the validity of the *controllability* dimension. The reliability of the **CDSCR** also appears to have been supported, in spite of the marginal reliability of the *controllability* and *intentionality* subscales and the difficulties involved in accurately assessing the reliability of the *self-other* subscale. As in all empirical studies, the imperfections involved in scientific research require that certain cautions be expressed in view of the equivocal nature of the findings presented in this thesis. To the extent that these results may have been affected by the following variables, the validity and reliability of the **CDSCR** must be regarded as only tentative: the use of hypothetical scenarios, the implementation of a multiple matrix design, the potential extraneous influence of the instructions as well as the events contained in the scenarios, the length of the questionnaire, and the use of college students to portray the universe of participants involved in close relationships.

Based on these limitations, the following recommendations for further research are proposed. Alternative means of conceptualizing the locus of causality dimension should be considered in an attempt to reduce the confusion related to the use of semantic differential scale items for a dimension which is not truly bipolar. Perhaps a Likert scale would be preferable for the locus of causality items, although the disadvantages of using two different scale formats on one instrument should be carefully considered. The validation of the **CDSCR** should be repeated with a different design than the one used in this study. If it is not feasible to have participants respond to each of the scenarios on all 21 questions (possibly by breaking the administration into several distinct time periods), then perhaps the scenarios should be sampled instead of the questions. It is also recommended that this instrument be validated in a clinical setting

involving participants in therapy for relationship difficulties. There should also be some means of insuring that the scenarios are typical real-life scenarios as opposed to hypothetical ones which may or may not be typically encountered by people involved in close relationships. In addition, the difficulties involved in estimating the reliability of the *self-other* subscale should be overcome and the marginal reliability of the controllability and *intentionality* subscales should be investigated prior to using this instrument in a clinical setting. Finally, the construct validity of this instrument needs to be further considered. Weiner (1985b, 1986) and Russell and McAuley (1986) have evaluated some of the affective properties of attributional dimensions. Future research might be able to utilize these other properties of causal dimensions as a means of validating questions on an instrument such as the **CDSCR**.

APPENDIX A

Causal Dimension Definitions

1. Self-Other refers to the degree to which a cause is located inside of self or inside of another person (this dimension is orthogonal, although not truly bipolar).

2. Self-Circumstances* refers to the degree to which a cause is located inside of self or in the outside circumstances (this dimension is *not* orthogonal nor is it truly bipolar).

These two dimensions are both *locus of causality* dimensions and refer to the degree to which the cause is located inside or outside of a person. Since external causes may either be located in another person or in the environment (circumstances), both of these alternatives have been provided in the instrument. Furthermore, instead of viewing these as two independent dimensions, it may be more accurate to consider them as one tri-polar dimension.

3. Stability refers to the degree to which a cause is constant over time. Causes may be viewed as either very permanent and stable on one extreme to highly transitory and unstable on the other extreme.

4. Globality refers to the extent to which causes are operative in a variety of situations (global) as opposed to a more limited number of situations (specific). Stability and globality are both aspects of causal constancy; stability relates to temporal consistency while globality relates to cross-situational consistency (Weiner, 1984).

5. Controllability refers to the capacity of a cause to be changed or affected by someone. Causes vary in the degree to which they are subject to the volitional control of people.

6. Intentionality* refers to the premeditational quality of a given cause. In most instances, controllability and intentionality highly covary. However, in some cases (eg., negligence) causes can be controllable and unintentional. Since uncontrollable causes are rarely intentional, this combination will not be addressed. Therefore, only controllable causes will be covaried with intentionality (as a result, this dimension is not orthogonal).

7. Attitude refers to the motivational or purposeful components of the specific attribution. Attitude may be viewed as ranging from very positive or benevolent (acting out of concern for partner) to very negative or malevolent (acting out of dislike or lack of concern for partner). This is similar to the *attitude* dimension highlighted by Passer et al. (1978) and the *intent* dimension proposed by Doherty (1981a).

*dimensions which are not orthogonal

APPENDIX B

The Causal Dimension Scale for Close Relationships

Event:

Cause:

Write down the one major **cause** which you think best explains the preceding event. Using the items below, describe this **cause** as accurately as possible. Circle one number for each question. You may find that on some questions this **cause** cannot be described by either statement. In this case, circle the 3.

- | | | | | | | |
|---|---|---|---|---|---|--|
| 1. Is this cause something that:
Reflects good will
toward another
person | 1 | 2 | 3 | 4 | 5 | Reflects ill will
toward another
person |
| 2. Is this cause something that is:
Associated with
your partner | 1 | 2 | 3 | 4 | 5 | Associated with
you |
| 3. Is this cause something that is:
Premeditated (by you
or another person) | 1 | 2 | 3 | 4 | 5 | Not premeditated (by
you or another person) |
| 4. Is this cause something that is:
Permanent | 1 | 2 | 3 | 4 | 5 | Temporary |
| 5. Is this cause something that is:
Variable over
time | 1 | 2 | 3 | 4 | 5 | Stable over
time |
| 6. Is this cause something that is:
Influenceable (by you
or another person) | 1 | 2 | 3 | 4 | 5 | Uninfluenceable (by you
or another person) |
| 7. Is this cause something that is:
Located in
you | 1 | 2 | 3 | 4 | 5 | Located in
the circumstances |
| 8. Is this cause something that:
Reflects an aspect of
you | 1 | 2 | 3 | 4 | 5 | Reflects an aspect of
the circumstances |
| 9. Is this cause something that:
Reflects
consideration toward
another person | 1 | 2 | 3 | 4 | 5 | Reflects a lack of
consideration toward
another person |

10. Is this cause something that is: Intended (by you or another person)	1	2	3	4	5	Unintended (by you or another person)
11. Is this cause something that is: Associated with the circumstances	1	2	3	4	5	Associated with you
12. Is this cause something that: Influences just this event	1	2	3	4	5	Influences many events
13. Is this cause something that is: Unplanned (by you or another person)	1	2	3	4	5	Planned (by you or another person)
14. Is this cause something that is: Located in you	1	2	3	4	5	Located in your partner
15. Is this cause something that is: Unchangeable (by you or another person)	1	2	3	4	5	Changeable (by you or another person)
16. Is this cause something that is: Momentary	1	2	3	4	5	Constant
17. Is this cause something that is: Controllable (by you or another person)	1	2	3	4	5	Uncontrollable (by you or another person)
18. Is this cause something that is: Associated with many events	1	2	3	4	5	Associated with only this event
19. Is this cause something that is: Motivated by selfish concerns	1	2	3	4	5	Motivated by unselfish concerns
20. Is this cause something that: Reflects an aspect of your partner	1	2	3	4	5	Reflects an aspect of you
21. Is this cause something that: Affects only this event	1	2	3	4	5	Affects many events

A total score for each of the subscales is obtained by *reversing* the scales on questions 3, 4, 6, 7, 8, 10, 14, 17, 18, and 19 and *summing* the responses on the appropriate questions as follows: **self-other** (2, 14, 20); **self-circumstances** (7, 8, 11); **stability** (4, 5, 16); **globality** (12, 18, 21); **controllability** (6, 15, 17); **intentionality** (3, 10, 13); **attitude** (1, 9, 19).

High scores on these subscales indicates that the cause is perceived as located in oneself, stable, global, controllable, intentional, and negative in attitude.

APPENDIX C

Scenarios

- Event: We had a disagreement after we came home from the party.
Cause: I became convinced long ago that a party setting is the best place for me to help my spouse become more socially involved.
- Event: We tried to calm each other as the airplane engine coughed, sputtered, and died.
Cause: My instinctive dread of dying in a fatal airplane crash triggered within me an overwhelming concern for my spouse's safety.
- Event: We had an argument before work in the morning.
Cause: My spouse is dedicated to the cause of getting me to work on time.
- Event: We agreed that it was time to have an open discussion about the recent conflict in our relationship.
Cause: My spouse's recent hormonal imbalance has intensified his/her emotional hostility toward others.
- Event: We eventually apologized to each other at the conclusion of our marital argument.
Cause: I have never been willing to apologize in a marital argument without first ventilating my hostility.
- Event: We clung to each other as we edged along the precipice of a steep cliff.
Cause: My instinctive fear of falling off of a steep cliff overwhelmed any concern I had for my spouse's safety.
- Event: We stuck very close together as we climbed up the steep mountain.
Cause: My spouse disdainfully insists on treating me like an incompetent little baby whenever we climb steep mountains.
- Event: We were irritable with each other in the morning.
Cause: The fire went out during the night and it was too cold in the house.
- Event: We had an argument in the morning over the botched breakfast.
Cause: I'm always "in a daze" when I graciously make breakfast for my spouse early in the morning.
- Event: We drove toward the most expensive restaurant in town for our anniversary.
Cause: My spouse has always been "in a daze" on our anniversary and is oblivious to the personal sacrifices he/she makes for me.
- Event: We did not seem to be communicating at the supper table.
Cause: I always get so preoccupied with satisfying my ravenous appetite at supper, that I forget to show any interest in my spouse.
- Event: We drove toward a very expensive restaurant.
Cause: My spouse always forgets our agreement not to spend my hard-earned money in this particular way.

- Event: We had an argument after we came home from the party.
Cause: Tonight I made a special effort to try and help my spouse to feel comfortable with some strangers at the party.
- Event: We were of great comfort to one another after the recent death of a parent.
Cause: I was helplessly overpowered with an unusual flood of compassion for my spouse at this particular time.
- Event: We expressed our affection to each other.
Cause: My spouse made an uncharacteristic effort to express his/her affection toward me on our anniversary.
- Event: We ate at a very expensive restaurant.
Cause: We have enough money to be rich for life.
- Event: We did not seem to be communicating at the supper table.
Cause: I deliberately provoked my spouse by clinking my glass.
- Event: We apologized for being so irritable to each other about having to move to another city.
Cause: I was surprised at how my irritable disposition suddenly overpowered me at the prospect of having to move away.
- Event: We did not seem to be communicating at the supper table.
Cause: My spouse decided to focus completely on satisfying his/her appetite rather than show any interest in me.
- Event: We were very irritable with each other about having to move to another city.
Cause: My spouse's irritable disposition suddenly overpowered him/her in an uncharacteristic fashion at the prospect of having to move away.
- Event: We hugged each other 3 times before parting this morning.
Cause: I accidentally gave my spouse his/her birthday present a week early.
- Event: We hugged each other 3 times before parting this morning.
Cause: My spouse accidentally made breakfast this morning when it wasn't even his/her turn.
- Event: We did not seem to be communicating at the supper table.
Cause: I was very uptight about the cost of the meal and, to my surprise, caught myself being very harsh with my spouse.
- Event: We had an argument about the housework duties.
Cause: My spouse forgot his/her promise to take responsibility for the housework this week.
- Event: We greeted each other affectionately when we arrived home from work.
Cause: I am devoted to my spouse.
- Event: We greeted each other affectionately when we arrived home from work.
Cause: I was born with an affectionate disposition.
- Event: We got into an argument as we hiked up the steep mountain.
Cause: My spouse is determined to protect me from all dangers.

Event: We greeted each other affectionately when we arrived home from work.
Cause: My spouse has inherited an affectionate disposition from his/her mother that has enriched our marriage.

Event: We had a screaming match first thing in the morning.
Cause: I have always enjoyed teasing my spouse about his/her looks.

Event: We were able to have some time off from work together.
Cause: Our respective careers have always allowed us to have time off from work together.

Event: We had a screaming match first thing in the morning.
Cause: My spouse always insists on harping on my shortcomings.

Event: We had another screaming match this morning.
Cause: My spouse was born with a hormonal problem (dysfunctional pituitary gland) that has always intensified his/her emotional hostility.

Event: We did not share the housework equally last week.
Cause: I consistently yet unconsciously forget to leave other people's work for them to do.

Event: We got into an argument as we hiked along the difficult trail.
Cause: My spouse is unaware of his/her pervasive worrying about my safety.

Event: We did not seem to be communicating at the supper table.
Cause: I always get so preoccupied in talking about my own interests that I forget to give others a chance to get a word in edgewise.

Event: We had a screaming match first thing in the morning.
Cause: Although my spouse is not aware of it, he/she inadvertently ends up being very nasty.

Event: We greeted each other affectionately when we arrived home from work.
Cause: I've been trying to be a nice person for the last week.

Event: We had an argument as we hiked along the steep trail.
Cause: My recent hormonal imbalance has greatly intensified my emotional concern for my spouse's safety.

Event: We got into an argument as we drove home.
Cause: In an unusual manner, my spouse has been trying very hard recently to protect me from danger.

Event: We greeted each other affectionately when we arrived home from work.
Cause: Our work load assignments were unusually light this week.

Event: We had a heart-to-heart discussion together after our argument.
Cause: I had been deliberately provoking my spouse recently.

Event: We agreed that it was time to have an open discussion about the recent conflict in our relationship.
Cause: My recent hormonal imbalance has intensified my emotional hostility toward others.

Event: We had a screaming match first thing in the morning.
Cause: For the last few days, my spouse has been provoking me at every opportunity.

Event: We began to shriek at each other as our car swerved off the road.
Cause: My spouse's instinctive dread of dying in a fatal car crash completely overpowered him/her with an intense concern for my safety.

Event: There was a long period of uncomfortable silence between us.
Cause: I did not realize that my recent attempts to cheer up my spouse were having the opposite effect.

Event: We were affectionate with each other this morning.
Cause: Recently, my spouse has been absentmindedly oblivious to my faults.

Event: We had a screaming match first thing in the morning.
Cause: I was unaware that I had been so nasty toward others the last few days.

Event: We apologized to each other at the conclusion of our disagreement.
Cause: During the last week, my spouse has been quite absent-minded and has forgotten to consider the rights and interests of others.

Event: We agreed to be more tolerant with one another at the conclusion of our emotional fight.
Cause: I was born with a hormonal problem (dysfunctional pituitary gland) that has always intensified my emotional hostility.

Event: We congratulated each other on our recent mountain climbing expedition.
Cause: The mountain was the highest one in South America.

Event: We clung to each other as we edged along the precipice of a steep cliff.
Cause: My spouse's instinctive fear of falling off of a cliff overwhelmed any concern he/she had for my safety.

Event: We were irritable with each other when we had to cancel our hike.
Cause: It was raining hard in the morning.

Event: We were of great comfort to one another after the recent death of a parent.
Cause: My spouse was helplessly overpowered with an unusual flood of compassion for me at this particular time.

Event: We ate at a very expensive restaurant.
Cause: Fate has destined us to always be rich.

Event: We had an argument as we hiked along the steep trail.
Cause: My spouse's recent hormonal imbalance has greatly intensified his/her emotional concern for my safety.

Event: We were very irritable with each other.
Cause: There has been a severe heat spell for the last several weeks.

APPENDIX D

Instructions

The following questionnaire includes a number of **events** which might occur in a marital relationship. Following each event is a **cause** explaining the supposed reasons for the occurrence of the behavior.

Example:

Event: We have been experiencing a lot of conflict in our relationship.

Cause: My spouse is in a nasty mood these days.

In each of the events that follow, imagine yourself to be one of the partners in the marital relationship that is being described. Imagine that the **cause** which follows each event is the one that **you** have identified as the best explanation for this behavior. After each cause is a series of seven questions. We would like you to answer each of these questions using only the information contained in the **cause** with which you have been provided. Do not expand this causal information by searching for additional explanations.

Please read carefully the examples that follow. The questions in these examples are identical to the ones which you will be answering in the questionnaire itself (although the **events** you will be given later will be based in a marital relationship). These examples have been answered for you to illustrate the types of responses that you are expected to provide. Following each response is an explanation to describe why the particular alternative was chosen.

Example #1:

Event: *We had a very enjoyable time together at the movies.*

Cause: *My friend is committed to making me happy.*

1. Is this **cause** something that is:
- | | | | | | | |
|-------------------|---|---|---|---|----------|----------------------------|
| Located in
you | 1 | 2 | 3 | 4 | <u>5</u> | Located in
your partner |
|-------------------|---|---|---|---|----------|----------------------------|

Although this cause includes information concerning both you and your partner, the focus is primarily on the actions and initiative of your *partner*.

2. Is this **cause** something that is:
- | | | | | | | |
|--------------------------------------|---|---|----------|---|---|------------------------|
| Associated with
the circumstances | 1 | 2 | <u>3</u> | 4 | 5 | Associated with
you |
|--------------------------------------|---|---|----------|---|---|------------------------|

Note! Since this cause is about the initiative of your *partner* and **not** about the *circumstances* or *you*, the appropriate response is 3. The rationale for this answer is further explained to you at the top of page 3.

3. Is this **cause** something that is:
 Variable over time 1 2 3 4 5 Stable over time

Commitment is typically something that is longterm; it can be assumed to be fairly stable over time.

4. Is this **cause** something that:
 Influences just this event 1 2 3 4 5 Influences many events

Your partner's *commitment* to your friendship will likely be demonstrated not only in going to the movies but in many other events in the relationship as well.

5. Is this **cause** something that is:
 Unchangeable (by you or another person) 1 2 3 4 5 Changeable (by you or another person)

The *commitment* of your friend represents a voluntary decision which is under his/her control. Therefore, such a decision can be changed should your friend so decide.

6. Is this **cause** something that is:
 Intended (by you or another person) 1 2 3 4 5 Unintended (by you or another person)

Commitment involves a decision which is intentional (premeditated and planned) as opposed to one which is unintentional (not premeditated and unplanned).

7. Is this **cause** something that is:
 Motivated by selfish concerns 1 2 3 4 5 Motivated by unselfish concerns

This kind of *commitment* involves unselfish concern for one's friend.

APPENDIX E

The instructions below were read verbatim to the participants (the page numbers refer to the three pages of written instructions — see Appendix D). The darkened portions represent the points that were emphasized for the participants. Each of the four examples was illustrated on an overhead transparency.

1. Please answer the three personal questions on the front page.

Do not place your name on this questionnaire. Your responses to this questionnaire will be completely anonymous.

2. Begin by reading the instructions very carefully!

STOP and WAIT after you have finished reading to the end of page 3.

3. I would like to clarify some of these instructions before you begin.

Refer to the instructions on page 1, paragraph 2 (read the last two sentences).

"We would like you to answer each of these questions using only . . . "

The information provided in the cause does not necessarily include all of the information needed to fully explain the event.

You may be tempted to search for additional information.

Example #1

Event: We had an argument over how to split the rent.

Cause: My friend is very irresponsible in money matters.

The **temptation** here may be to search for **additional** information to further explain the cause you have been given.

You might ask yourself **why** your friend is irresponsible in money matters, and come up with an answer, such as:

My friend learned from his father bad habits in dealing with money.

The **PROBLEM**, as illustrated in this example, is that when you develop an additional cause of your own, you may use it as information to help answer the question.

4. **Refer to the instructions on page 3 near the bottom** (read the underlined sentence).

It is important to refer only to the cause when answering the questions and not the event.

Example #2

Event: My friend interrupted me at work when I was in the middle of an important meeting.

Cause: Out of sincere concern for my recent illness, my friend had phoned to remind me about my doctor's appointment.

Is this **cause** something that:

Reflects	1	2	3	4	5	Reflects a lack of
consideration toward						consideration toward
another person						another person

If you based your answer on the **event**, you would likely circle the 5.

However, if you based your answer on the **cause**, you would perhaps circle the 1.

It is important that you base your answer on the **cause**.

5. Some questions may be more difficult to answer than others; you will have to make some delicate judgements.

Example #3

Event: We had an argument while we drove to the theatre.

Cause: I get very distressed whenever we drive downtown.

Is this **cause** something that is:

Located in you	1	2	3	4	5	Located in the circumstances
-------------------	---	---	---	---	---	---------------------------------

There are two important pieces of information contained in this cause:

- 1) my distressed state (something about you)
- 2) driving downtown (something about the circumstances)

You have to decide which information is most important in answering the above question.

Example #4

Event: We had an argument.

Cause: My stubborn personality often gets the best of me.

Is this **cause** something that is:

Controllable (by you or another person)	1	2	3	4	5	Uncontrollable (by you or another person)
--	---	---	---	---	---	--

Refer to the instructions on page 1, paragraph 2 again. Read the two underlined sentences: "Imagine that the cause . . ." (begin only and let them read)

You may believe that a stubborn personality is controllable. However, the instructions tell you to:

- 1) treat the cause as if **you** believe it to be the **best** explanation for the event.
- 2) accept the cause the way it is without adding to it.

This type of situation will also require a delicate judgement on your part.

6. You will notice that the pages are out of order; this is intentional.

7. Although the responses are **underlined** in the examples in the instructions, you are asked to **circle** your responses in the actual questionnaire.

8. I would like to warn you that this is a very challenging task requiring a high level of concentration.

You may need to give your mind a short break every once in awhile.

Feel free to stretch in your seat, breathe deeply, etc.

9. Remember that the events that you will be considering are based in a marital setting. You are to try to imagine that you are one of the partners in the marital relationship that is being described.

10. I would like to emphasize that the main purpose of the questionnaire is to discover how people perceive these types of causes. In the end it is the questionnaire that is being evaluated rather than your performance.

APPENDIX F

Table F-1
Analysis of Variance Results for the Causal Dimension Subscales for Male Participants

Scale	Effect																							
	Self-other			Self-circum			Stability			Globality			Control			Intent			Attitude					
	F	ω^2	η^2	F	ω^2	η^2	F	ω^2	η^2	F	ω^2	η^2	F	ω^2	η^2	F	ω^2	η^2	F	ω^2	η^2			
Self-other	4109.90	.73	***	566.09	.36	***	1.70	.00	<1	.00	<1	.00	<1	.00	<1	.00	<1	.00	<1	.00	6.19	.00		
Self-circum	319.51	.18	***	337.52	.25	***	31.10	.02	74.03	.04	***	69.85	.04	***	25.32	.02	***	1.24	.00	9.29	.01	***		
Stability	1.09	.00		6.14	.01	*	808.46	.32	21.56	.01	***	<1	.00	<1	.00	<1	.00	5.98	.00	9.29	.01	**		
Globality	<1	.00		4.80	.00	*	58.90	.03	373.06	.18	***	<1	.00	<1	.00	<1	.00	<1	.00	1.23	.00	***		
Control	7.08	.00	**	44.59	.04	***	11.40	.01	<1	.00	<1	.00	383.78	.18	***	83.70	.05	***	11.05	.01	11.05	.01	***	
Intent	7.20	.00	**	19.16	.02	***	13.34	.01	1.41	.00	***	151.62	.08	***	509.44	.26	***	14.35	.01	14.35	.01	14.35	.01	***
Attitude	1.52	.00		<1	.00		<1	.00	<1	.00	<1	.00	5.77	.00	*	1.00	.00	898.04	.38	898.04	.38	898.04	.38	***

*p<.05 **p<.01 ***p<.001

Table F-2
Analysis of Variance Results for the Causal Dimension Subscales for Female Participants

Scale	Effect																								
	Self-other			Self-circum			Stability			Globality			Control			Intent			Attitude						
	F	η^2		F	η^2		F	η^2		F	η^2		F	η^2		F	η^2		F	η^2					
Self-other	24571.20	.79	***	3452.94	.44	***	11.45	.00	<1	.00	<1	.00	<1	.00	<1	<1	.00	<1	<1	.00	<1	.00	15.37	.00	***
Self-circum	1996.68	.23	***	2211.58	.34	***	94.75	.01	232.32	.03	***	257.57	.03	117.66	.02	***	16.68	.00	32.44	.01	***	32.44	.01	***	
Stability	<1	.00		4.77	.00	*	3934.19	.34	182.51	.02	***	<1	.00	<1	.00	16.68	.00	32.44	.01	***	32.44	.01	***		
Globality	<1	.00		9.79	.00	**	286.29	.04	2719.67	.26	***	9.34	.00	30.01	.00	***	30.01	.00	3.56	.00	***	3.56	.00	***	
Control	45.92	.01	***	345.17	.07	***	3.98	.00	4.95	.00	*	1776.37	.19	543.02	.08	***	543.02	.08	16.62	.00	***	16.62	.00	***	
Intent	20.50	.00	***	57.82	.01	***	20.70	.00	6.67	.00	*	786.17	.09	2853.15	.30	***	2853.15	.30	55.98	.01	***	55.98	.01	***	
Attitude	13.01	.00	***	<1	.00		4.49	.00	3.66	.00	*	55.90	.01	1.50	.00	***	1.50	.00	5253.68	.45	***	5253.68	.45	***	

*p<.05 **p<.01 ***p<.001

Table F-3
Analysis of Variance Results for the Causal Dimension Subscales for Single Participants

Scale	Effect																					
	Self-other			Self-circum			Stability			Globality			Control			Intent			Attitude			
	F	ω^2		F	ω^2		F	ω^2		F	ω^2		F	ω^2		F	ω^2		F	ω^2		
Self-other	5332.20	.76	***	742.85	.40	***	3.65	.00	<1	.00	<1	.00	<1	.00	<1	.00	<1	.00	<1	.00	4.06	.00
Self-circum	357.30	.18	***	386.80	.26	***	20.36	.01	76.00	.04	***	67.68	.03	***	25.21	.01	***	1.27	.00	15.04	.01	***
Stability	<1	.00		<1	.00		649.13	.25	29.63	.01	***	1.77	.00	3.13	.00	***	15.04	.01	<1	.00	<1	.00
Globality	<1	.00		5.83	.01	*	68.59	.03	534.57	.21	***	2.75	.00	7.91	.00	**	<1	.00	<1	.00	<1	.00
Control	18.17	.01	***	101.24	.08	***	<1	.00	2.19	.00	***	431.59	.18	***	138.78	.08	***	4.47	.00	4.47	.00	*
Intent	4.16	.00	*	1.83	.00		6.78	.00	1.48	.00	***	133.39	.06	***	670.33	.28	***	12.30	.01	12.30	.01	***
Attitude	7.15	.00	**	<1	.00		<1	.00	1.18	.00	***	12.34	.01	<1	.00	<1	.00	1006.67	.38	1006.67	.38	***

*p<.05 **p<.01 ***p<.001

Table F-4
Analysis of Variance Results for the Causal Dimension Subscales for Married Participants

Scale	Effect															
	Self-other		Self-circum		Stability		Globality		Control		Intent		Attitude			
	F	η^2	F	η^2	F	η^2	F	η^2	F	η^2	F	η^2	F	η^2		
Self-other	20077.54	.79	2777.85	.43	9.44	.00	<1	.00	<1	.00	<1	.00	<1	.00	12.95	.00
	***		***		**										***	
Self-circum	1645.33	.23	1790.99	.33	93.76	.01	198.95	.03	213.82	.03	97.91	.02	<1	.00	<1	.00
	***		***		***		***		***		***					
Stability	<1	.00	8.36	.00	3695.90	.37	153.10	.02	1.21	.00	17.67	.00	31.75	.01	31.75	.01
			**		***		***				***		***		***	
Globality	<1	.00	7.37	.00	247.19	.04	2047.02	.24	2.23	.00	15.50	.00	<1	.00	<1	.00
			**		***		***				***					
Control	35.17	.01	232.29	.06	12.51	.00	1.94	.00	1405.61	.18	396.84	.07	20.35	.00	20.35	.00
	***		***		***				***		***		***		***	
Intent	23.92	.00	78.09	.02	21.10	.00	2.40	.00	645.99	.09	2331.88	.30	50.62	.01	50.62	.01
	***		***		***				***		***		***		***	
Attitude	6.65	.00	<1	.00	1.67	.00	1.51	.00	37.02	.01	<1	.00	4200.92	.44	4200.92	.44
	**								***				***		***	

*p<.05 **p<.01 ***p<.001

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