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The Psychological Autopsy Study of Completed Suicide: An Experimental Test of the Impact of Knowledge of the Suicide upon Informants' Reports of Psychopathology in the Victim

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LOYOLA UNIVERSITY CHICAGO

THE PSYCHOLOGICAL AUTOPSY STUDY OF COMPLETED SUICIDE: AN EXPERIMENTAL TEST OF THE IMPACT OF KNOWLEDGE OF THE SUICIDE UPON INFORMANTS' REPORTS OF PSYCHOPATHOLOGY IN THE VICTIM

A DISSERTATION SUBMITTED TO THE FACULTY OF THE GRADUATE SCHOOL IN CANDIDACY FOR THE DEGREE OF DOCTOR OF PHILOSOPHY

DEPARTMENT OF PSYCHOLOGY
CLINICAL DIVISION

BY
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All rights reserved.
Several people have contributed to my work and have my sincere gratitude. First and foremost, James E. Johnson, Ph.D. who has been my advisor throughout my studies at Loyola and the director of my dissertation committee. His mentorship, guidance, and example have been invaluable to this work and to my professional development as a whole.

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ABSTRACT

The psychological autopsy study of completed suicide enlists relatives and friends to provide information about the psychological functioning of the victim. The accuracy of reports may be compromised by these informants' knowledge of the suicide. One hundred-seventy subjects participated in this experimental study of memory and hindsight biases, which examined the impact of knowledge of a victim's suicide upon subjects' recall of symptoms of psychological distress in that victim. Fictional actors' life histories were presented in brief vignettes with one of four possible outcomes (gunshot suicide, carbon monoxide suicide, accidental death, and no outcome) as were psychological distress rating scales regarding the actors. Subjects were tested for recall of symptoms of psychological distress and retrospectively estimated the likelihood of the actor committing suicide. Effects of outcome and actors' and subjects' genders upon recall of psychological distress and retrospective rating of the likelihood of suicide were examined. The effect of extreme (high versus low) hindsight rating style was also assessed.

Subjects recalled significantly higher levels of global
psychological distress in male gunshot suicides than in female accidental deaths, male carbon monoxide suicides, and females for whom no outcome was presented. Male gunshot suicides were remembered as significantly more depressed than male accidental deaths and females for whom no outcome was presented. Female carbon monoxide suicides were remembered as significantly more interpersonally sensitive than male carbon monoxide suicides. Gunshot suicide victims were recalled as significantly more somaticizing than actors in the accidental death and no outcome vignettes.

The effect of outcome knowledge upon retrospective suicide likelihood ratings was nonsignificant. A significant effect of subject gender was observed. Females rated suicide as having been more likely than did males. Hindsight status and the interaction of hindsight status and gender resulted in significant effects. High raters recalled higher levels of global psychological distress, somatization, hostility, phobic anxiety, and psychoticism. Male high hindsight subjects recalled higher levels of global psychological distress than subjects in the three remaining conditions.

Study findings provide evidence of bias in subjects who are aware of a victim's suicide. Implications for the psychological autopsy study of suicide are discussed.
To Mother and Dad
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CHAPTER I
INTRODUCTION

The Study of Completed Suicide

Capturing the salient characteristics of suicide victims demands a balance of scientific rigor and methodological ingenuity. A range of qualitative and quantitative approaches has been taken to investigate their lives, each with advantages and limitations. Suicide notes, personal effects, academic, medical, and psychiatric histories, and legal records have been systematically culled to generate profiles and increased understanding of these victims (Brent, Perper, Kolko, & Zelnack, 1988; Fawcett & Clark, 1987; Lester, 1991; Shaffer, Perlin, Schmidt, & Himmelfarb, 1971). The development of strategies for the standardization, quantification, and analysis of these materials which provide for sound interpretation is tricky, however, and depending upon the method used, various threats to internal and external validity can arise (Barraclough, Bunch, Nelson, & Sainsbury, 1974; Pfeffer, 1989; Sanborn, Sanborn, & Cimbolic, 1973; Shaffer et al., 1971).

Because it is a phenomenon that is unamenable to recreation and experimental control, the initial challenge in the study of completed suicide is the acquisition a sample
from which interpretable and generalizable findings can be generated. From a strictly scientific perspective, the option of prospective research holds appeal. However, application of a contemporaneous design to completed suicide is problematic for several reasons. From a practical perspective, the low base rate of suicide would dictate large samples, entailing considerable expenditures of time and funding. In addition, it is unknown how involvement in a research study may impact the psychological status of research subjects and perhaps temper self-destructive tendencies. More compelling caveats with prospective designs are the moral and ethical concerns which should attend them. Members of a community or high-risk sample identified during the course of a study as being in danger of imminent self-harm should be treated so that a self-destructive act would not ultimately transpire. Although clearly dictated from an ethical standpoint, such an intervention would constitute a confound to a study intended to naturalistically observe completed cases of suicide. A prospective investigation with a prevention component built in would undoubtedly yield information pertinent to intervention and identification of risk markers, but would not allow for interpretations relevant to the entire population of suicide completers, limiting its external validity. Alternatively, prospective data may be obtained from clinical cases that culminate in unexpected or unprevented suicides during the course of
mental health treatment, serendipitously providing contemporaneous data. Again however, such cases would not provide a representative sample of all suicides nor would they yield uniform information, limiting their generalizability and utility from a public health perspective.

In light of the aforementioned constraints, large-scale, controlled research projects designed to identify the internal and external antecedents to suicidal deaths are rarely informed by first-hand, systematic scrutiny of their actual subjects. The most proximal groups available for direct study are those comprised of people who have seriously contemplated and/or attempted suicide. Scrutiny of them may provide some clues to the phenomenon of completed suicide. However, there are salient differences between attempters or contemplators and those who actually commit suicide (Hawton, 1986). Selection and history biases would limit the generalizability of studies conducted with these samples. In addition to the primary difference between having thought about or attempted suicide and actually completing it, such individuals would also have been selected by virtue of their contact with health or mental health care systems. It is unclear how this contact impacts the psychological state of the victim and obscures the nature of his or her state of mind at the time of the attempt. Additionally, it is unknown how the attempt or the survival of an attempt may alter the
patient (Brent et al., 1988). Other differences exist between these populations as well, including the degree of the lethality of their self-destructive gestures and the level of their intent to actually die (Brent et al., 1988). Overall, the exact nature and extent of the departure of contemplators and attempters from suicide completers is difficult to measure empirically or to systematically take into account when drawing conclusions. Therefore, although attempted suicide poses compelling research questions in its own right and may provide an adequate comparison group for some lines of inquiry it cannot be assumed to be completely analogous to completed suicide.

Given the limited availability of analogous alternatives, post-hoc methods are more often applied to the study of actual suicide completers. The final nature of the event requires that comprehensive inquiries designed to identify antecedents, markers, concomitants, and predictors of suicide be indirect, employing retrospective and reconstructive methodologies. Obviously, the suicide victim is unavailable for direct study, making first-person assessment and observation impossible. Artifacts left by the victim, such as suicide notes, may provide a unique window to their subjective worlds, offering first-person accounts of the thoughts and feelings that immediately preceded the event, and can also be used as a basis for hypothesis generation. Yet these vestiges are minimally amenable to
nomothetic empirical approaches which demand standardized
data collection across subjects, and cannot be assumed to
reliably provide the breadth and depth of data that would be
of interest.

The Psychological Autopsy Method

In addition to eliciting the attention of mental health
professionals, completed suicides are of concern to the legal
officials charged with the duty of ruling on the nature of
the death. The psychological autopsy method was originally
adapted by the Los Angeles County Coroner's office to
investigate equivocal cases of death in its jurisdiction for
the purpose of determining the cause of death (i.e., suicide,
accident, or homicide). The method entails a detailed fact
finding effort designed to harvest the observations of the
people who were closest to the victim in a manner that
parallels the use of witnesses in legal investigations.
Borrowing from the investigative techniques used by police
officials, social scientists have likewise utilized the
psychological autopsy method to study suicide victims
(Schneidman & Farberow, 1970), and this innovation has
emerged as the contemporary method of choice for numerous
suicidologists who have undertaken large scale examinations
of completed suicides (Barraclough, Bunch, Nelson, &
Sainsbury 1974; Brent, Perper, & Allman, 1987; Dorpat &
Ripley, 1960; Fawcett & Clark 1987; Rich, Young, & Fowler,
1986; Rich, Warsradt, Nemiroff, Fowler, & Young, 1991; Robins, Gassner, Kayes, Wilkinson, & Murphy, 1959; Shaffer, 1974; Shaffer, 1988; Shaffi, Carrigan, Whittinghill, & Derrick, 1985; Shaffi, Steltz-Lenartsky, Derrick, Beckner, & Wittinghill, 1988). The survivors of the suicide -- family members and close friends-- are, in fact, eyewitnesses to the life of the person lost to them by the suicide. As such, they are enlisted as psychological autopsy informants to provide reports of their observations of the victim. The systematic inquiry is designed to recover detailed psychosocial information that will permit identification of the antecedents and predisposing factors to the suicide as well as the psychiatric status of the victim. One advantage of the psychological autopsy approach is the potential to use broadly representative samples and control groups; the method allows for the inclusion of consecutive cases of identified suicides in a pre-defined catchment area and recruitment of demographically matched living controls. Additionally, it provides the opportunity for retrieval of comprehensive standardized data regarding the suicides that can be subjected to statistical analysis.

The estimated 300% increase in the rate of adolescent (age 16-19) suicide in the past three decades has sparked considerable concern and interest among the mental health and public health communities (Brent, Perper, & Allman, 1987; Brent, Perper, Moritz, Allman et al., 1993; Fawcett & Clark,
Comprehensive community psychological autopsy studies of this alarming trend have been undertaken to develop a better understanding of the phenomenon and its etiology within this youthful population, for whom the rate of diagnostically significant psychopathology among suicide completers has been estimated to be 90% (Brent, Perper, Moritz, Allman et al., 1993). This population is particularly well-suited to the psychological autopsy approach, since most teenagers live with parents or parental figures, have social contact with their peer group, and have been observed by adults other than parents such as physicians, teachers, and athletic coaches. The increased likelihood of having been embedded in an extensive social milieu and having had varied interpersonal contact enhances the probability that these youths have been observed by sundry others, from a diversity of perspectives in a range of contexts, and for some of these others to have been privy to the victims' innermost thoughts and feelings. It has been suggested that age-matched peer informants, the focus of the present study, can lend unique contributions to the psychological autopsy of adolescent suicide victims (Brent, 1989; Fawcett & Clark, 1989; Rich et al., 1986). They are credited as being superior informants of positive substance abuse history and suicidal ideation, and in fact, are often the only informants in possession of this knowledge (Brent, 1989; Rich et al., 1986). Collectively, the peers,
relatives, and other associates of the adolescent victim are considered to have the ability to provide data adequate to construct a valid psychosocial profile of him or her in sufficient detail to render a psychiatric diagnosis.

During the course of the psychological autopsy, each informant is interviewed individually and asked to rate the presence or absence of each of the comprehensive diagnostic criteria of a variety of diagnoses. These reports are typically elicited by the use of standardized measures or structured clinical interviews administered by trained interviewers. Standardization and training are employed to enhance the internal validity of the psychological autopsy by the use of psychometrically validated measures such as the Schedule for Affective Disorders and Schizophrenia (SADS; Endicott & Spitzer, 1978) and Kiddie Schedule for Affective Disorders and Schizophrenia (Kiddie SADS; Orvaschel & Puig-Antich, 1986). Upon completion of the entire set of individual interviews, the discrete reports are typically compared and assessed for inter-rater agreement, and discrepancies are noted. One strategy for reconciling divergent reports and presumably enhancing the internal validity the psychological autopsy is seeking consensus among the informants (Brent, Perper, Moritz, Allman et al., 1993; Fawcett & Clark, 1987). An alternative approach employed by some investigators is to use the individual interview data collectively, such that a positive diagnosis can be reached
by endorsement of the necessary criteria across informants (Rich, Fowler, & Young, 1986). These investigators have asserted that it is prudent to assume that the likelihood of subjects reporting false negatives is greater than that of reporting false positives. This position will be argued to be of questionable merit in the present discussion.

The rationale for using informants in the psychological autopsy to reach a diagnostic conclusion rests upon the assumption that they will provide veridical reports of the victim's psychological functioning. In theory, those who had direct and ongoing relationships with the victim would have intimate knowledge of his or her thoughts, feelings, and behaviors, enabling them to render data adequate to determine the presence of a psychiatric diagnosis. It is unclear however, that such third-party informants are able to provide accurate reports of the victim's psychological state (Barraclough et al., 1974; Rich, Young, & Fowler, 1986; Rudestam, 1979; Shaffer et al., 1971). Accuracy may be compromised by several factors, including the informants' subjective beliefs regarding mental health and related phenomena, the natural fallibility of human memory, and the informants' mere knowledge of the suicide. With respect to the latter, the outcome knowledge of the suicide, it is plausible that in and of itself this might elicit a bias in the memories of informants as they struggle to understand the psychology and experience of an individual who has died by
his or her own hand.

The Nature and Limits of Human Memory: Schemas, Stereotypes, Hindsight, and Inference

Memories are neither stored nor retrieved as discrete independent entities. Rather, they are subjected to various cognitive processes that influence content and accuracy on recall and recognition tasks (Bodenhausen, 1988; Srull, Lichtenstein, & Rothbart, 1985; Srull & Wyer, 1989). Existing knowledge and belief sets systematically influence subjects' perceptions and interpretations of new information (Dawes, 1994; Schneider, 1991) and one way of explaining memory storage and retrieval is schema theory (Dawes, 1994; Fiske & Taylor, 1991). Schemas are cognitive sets that contain acquired knowledge regarding the general features of ecological categories. During the course of their experiences people acquire general knowledge of the world and thereafter hold expectations—both tacit and explicit—about what a particular place or situation will consist of that are consistent with their prior observations (Fiske & Taylor, 1991). For example, when one visits a restaurant one may expect basic components to be present in this situation (e.g., a menu, other patrons, a check, etc.). People use the general principles contained in their schemas to make inferences in the absence of completely detailed information. Simply stated, people draw from their store of accumulated
general knowledge to "fill in the blanks," when asked to recall the details pertaining to specific events, and this inference process may or may not produce accurate recall. Moreover, people may be unaware at times that they are inferring from existing knowledge and inserting schema consistent particulars rather than recalling or recognizing a detail that was actually present in a new situation.

Examples of this phenomenon have a long history in the memory literature. Bartlett (cited in Anderson, 1985) elaborated schema theory in 1932 and demonstrated the effect of cultural schemas on subjects' recollection of a passage of text. He presented English subjects with a narrative borrowed from the oral literary tradition of the Indians of Canada. Subjects were instructed to recall the story after various lengths of delay. His findings showed that subjects "rewrote" the story, adding and modifying information. The interesting aspect of his finding was that the errors in the subjects' accounts were consistent with their own cultural knowledge, that is, they retold the story such that it fit their personal schemas.

Experimental subjects have been observed not only to fabricate details of impersonal events but to create what they believe to be actual autobiographical memories, demonstrating the robustness of people's propensity for retrospective distortion. Loftus and Ketchum (1994) reported a study which demonstrated that once convinced that a
fictitious event actually took place, people will manufacture the supposed details of the event. Subjects in this study were siblings of undergraduate psychology students. Acting as confederates, the students “reminded” younger siblings of having been lost in a shopping mall at a much younger age, although this event had never taken place. Once convinced that the fabricated event had occurred, the young siblings elaborated the experience, often in great detail, generating what they believed to be actual memories of the specifics of the experience.

Faulty memories can also be produced when people attempt to recall information regarding other people. Despite their best intentions to remain objective and to recall the actual overt behaviors of another person, people have shown a tendency to merge their direct observations with subjective general knowledge or belief systems when reaching judgements or conclusions about those others (Uleman and Moskowitz, 1994). Evaluators are likely to infer, interpret, or elaborate when presented with salient pieces of information, such as statements of theme or context, and subsequently to erroneously “recall” information that had not been included in stimulus materials. In a study conducted by Owens, Bower, and Black (1979) subjects read vignettes about a woman and were given a recall test. Those provided with additional but equivocal thematic information elaborated the information in the text in a way that was inconsistent with the facts that
had actually been presented, yet consistent with their subjective cognitive sets regarding the thematic statement. Although in some instances such inferences may be correct, clearly they may lead subjects to offer incorrect information regarding specific instances. Sulin and Dooling (1974), used a paradigm similar to Owens and colleagues. They had subjects read a passage about a "wild, stubborn, and violent" child. For one group the girl in the passage was identified as "Carol Harris." In the other group, the subject of the story was identified as "Helen Keller." Subjects in both groups were given a recognition test after a one week delay. Of those in the "Carol Harris" condition, 5 percent incorrectly judged that they had seen the critical sentence *She was deaf, dumb, and blind.* In contrast, 50 percent of the subjects in the "Helen Keller" condition incorrectly inferred that they had seen the same critical sentence. Based upon subjects' outside knowledge, the inference was reasonable. Nevertheless, the critical sentence had not been presented in the experimental text, making subjects' responses erroneous in this case.

Social stereotypes can be understood as schemas containing beliefs about members of social categories or groups (e.g., women, truck drivers, Catholics). Membership in a distinct social category connotes definitive characteristics to those who subscribe to the stereotypic notions associated with that group, and evidence of
stereotype-consistent bias in studies of person memory has been experimentally elicited. It has been noted that people tend to selectively recall information that is consistent with their stereotypes and to distort information in such a way that they offer reports that are more in line with these stereotypes than with information presented to them. An example of such an effect was elicited by Snyder and Uranowitz (1978). They furnished subjects with ambiguous vignettes that described the life history of a woman named Betty K. Two of three groups were given “outcome” information. After reading the life history, one group was informed that the woman was leading a lesbian lifestyle. Another group was told that Betty K. led a heterosexual lifestyle. The result of this outcome manipulation was that subjects erroneously “remembered” details of her life history as being consistent with stereotypical notions associated with Betty K.’s sexual orientation. Thus, subjects in the lesbian condition reconstructed Betty’s life history in a way that was consistent with lesbian stereotypes, while those in the heterosexual condition remembered her in a manner that was in line with a heterosexual lifestyle. The importance of the stereotype based bias observed in the reviewed studies is that it indicates that when asked to recall their observations of others, people use personal belief systems and social constructs as well as previously learned objective information such as is contained in schemas.
This tendency to "find" and to "recall" what one expects is a well established phenomenon that has been demonstrated in several research paradigms. Such "top down" effects were identified long ago by Thorndike (1920, cited in Berman & Kenny, 1976) in his discussion of "halo effects". Subjects have repeatedly been found to make attributions about other people on the basis of information outside of that which they had observed directly or been provided about the person. Thus, rather than seeking and using observational or objective data, raters will attribute to others a trait or behavior which they believe to go hand in hand with what they know to be true about the person whom they are evaluating (Berman & Kenny, 1976). Observers make predictable inferential leaps based upon what they already know or believe they know about others. This effect has emerged in a range of contexts, suggesting that people are unlikely to rate others completely independently of their existing knowledge, beliefs, and stereotypes (Schaller & Maass, 1989; Schneider, 1991; Uleman & Moskowitz, 1994). Moreover, even when instructed to do so, experimental subjects fail to disregard their existing knowledge, particularly when the information to be dismissed is the final piece of information acquired (Wyer & Unverszag, 1985). The impact of the ordering of information is relevant to the retrospective study of completed suicide as the event is the final act of the victim's life and one of the final pieces of information
regarding the person that becomes available to his or her relatives, friends, and associates.

In sum, when remembering others, people seem as likely to be influenced by what they have been told or have conjectured as by what they have witnessed or observed firsthand. The relevance of such effects to the present problem is that they suggest that whether a person has developed the belief that suicide is associated with psychological disturbance informally or from reading factual material about suicide, they would be expected to be influenced by their a priori notions when asked to describe the suicide victim.

Fischhoff (1975) demonstrated that outcome knowledge impacts retrospective judgement as well as memory in his widely cited studies of the effect of knowledge of outcome information upon peoples' judgement of the a priori likelihood of the known outcome event occurring. Fischhoff (1975) presented subjects with clinical or historical passages of text and listed four possible outcomes for each. One group was provided with an additional sentence that provided the outcome of the situation. All subjects were instructed to rate the probabilities that they believed would be associated with each possible outcome, given the circumstances of the passage. Those subjects who had knowledge of the denouement consistently rated it as more probable than did the subjects who were without the benefit
of hindsight information.

In a related experiment, Fischhoff (1975) examined his subjects' awareness of the influence of their outcome knowledge on their retrospective probability estimates. His rationale was that if people were aware of such an influence they could control it, that is, disregard their outcome knowledge when making retrospective probability estimates. Subjects were provided with outcome knowledge and asked to ignore it when rating the probabilities of four possible outcomes, which included the one that they knew to be true. If subjects had been able to do this, their responses would have corresponded to their counterpart groups from the first experiment who were not given an outcome to the passages that they read. Fischhoff found that people were only marginally aware of the extent to which outcome knowledge impacted their ratings. This conclusion was based upon the finding that the "knowing but ignoring" groups rated the outcome as significantly more probable than did the unknowing subjects.

The effect of outcome knowledge upon subjects' retrospective likelihood estimates has been replicated in numerous studies (see Christensen-Szalanski & Willham, 1991 for a meta-analytic review of this research). Most germane to the present discussion was the elicitation of a hindsight effect in a study that presented suicidal outcomes to experimental subjects. Goggin and Range (1985) used Fischoff's design and observed a classic hindsight bias.
Their subjects read a one paragraph case study which described a thirteen-year-old girl whose life circumstances might portend a suicidal outcome: a broken home, a recent traumatic life event, and subjective hopelessness. Consistent with previous hindsight studies, these researchers found that subjects who received a suicidal outcome regarding the actor in the case history retrospectively rated the suicidal outcome as having been significantly more likely than did the subjects who received no outcome information.

Hindsight bias and people's apparent inability to reliably disregard what they already know in order to make independent post-hoc likelihood judgements have direct implications for the psychological autopsy method. The persistent influence of outcome knowledge would indicate that psychological autopsy informant recollections unbiased by such information (i.e., knowledge of the person’s suicide) may be unattainable. Fischhoff dubbed his observations "the knew it all along effect," and this effect suggests that whether they do so consciously or unconsciously, people are apt to weigh their judgments of the deceased in light of their knowledge of the suicide. Considered in light of the other patterns of memory distortion reviewed, the tendency toward hindsight bias suggests that outcome information would not only impact people's post-dictive judgements of the likelihood of events that they know to have occurred, but would also impact what people believe they accurately recall
about a person or situation. The psychological autopsy informant who makes the assumption that the deceased was mentally ill may be doing so only with the benefit of hindsight. Moreover, behaviors that seem salient or symptomatic after the fact of the suicide may seem so only with the benefit of this outcome knowledge. Hence, if questions about a victim could somehow have been posed to an informant prior to the suicide, he or she may give information different from what is ultimately gathered during the course of the psychological autopsy.

What people experience as actual memories, then, appear to be the productions of cognitive processes; integrations of what is already known in general terms, or believed in subjective terms, and what is actually observed. People may infer and remember according to schemas or they may "remember" as part of the stimulus materials, details that have actually been presented to them subsequent to their observation of the event (Loftus & Hoffman, 1989). It is plausible that this might occur in the context of the psychological autopsy when, subsequent to the suicide, informants are exposed to the observations of others who knew the victim, to popular literature, or to the remarks or opinions of professionals investigating the case.

The patterns of bias observed in schema, stereotype, and hindsight research call into question the degree of inference present in the testimonies of psychological autopsy
informants and cast them as dubious reconstructions. Discrepancies between equally knowledgeable informants have long been noted in psychological autopsies and no measurable explanations for these differences have been elucidated to date (Shaffer et al., 1971). It is unclear whether the thoughts, feelings, and behaviors attributed to the victim by the informants were actually present or the products of inferential processes. There are several ways in which the latter may occur. Informants may have their own theories of the causes of suicide of which they may or may not be fully aware. These notions may stem from their own reflections, cultural attitudes, religious beliefs, media coverage of such events, or dramatic and literary portrayals of suicide. Although people's beliefs about suicide may be valid for some cases, inferences drawn from these subjective explanatory frameworks about the specific individual of interest may be invalid.

Attitudes and Beliefs About Suicide: Individual Differences

Littman (1989) cited several societal sources of beliefs about suicide. The Vatican permits traditional burial and other religious rites for suicide victims on the rationale that a psychiatric disorder is necessary for a suicide to be carried out. Insurance companies, also accepting the illness model, reimburse medical costs incurred as the result of suicidal self-injuries. Sanctioned institutions' acceptance
of this model may influence the beliefs of lay people by providing a suicide victim stereotype or belief set that suggests that these people are, by definition, psychologically disturbed. Supporting this suggestion are studies of beliefs about suicide victims which report that significant percentages (34%-56%) of respondents to general population surveys believe that people who commit suicide are mentally ill (Kalish, Reynolds, & Farberow, 1974; Marks, 1989). Of 643 male and female survey respondents, 86% endorsed the statement that "most people who attempt suicide are lonely and depressed" (Domino, 1990). Marks (1989) reported that of 491 Arkansans surveyed, 71% endorsed the statement "a normal would not commit suicide," however, of the youthful participants (aged 18-35) 32% disagreed with this statement. Informants who subscribe to mental illness stereotypes regarding the psychological make-up of suicide completers --which the literature suggests is true of the majority of lay people-- may be more prone to inadvertently generate inaccuracies in their testimonies.

General patterns of bias or memory distortion may vary as a function of individual characteristics of the informants and the victims. One such individual difference is gender, and gender bias is a well documented phenomenon in social psychology research (Fiske & Taylor, 1991). In studies of attributions, attitudes, and impression formation gender effects emerge as a function of the gender of the person.
being rated as well as the person doing the rating. In addition to the influence of basic expectancy effects that are stereotype consistent, deviation from sex-role stereotypes has been demonstrated to impact the judgements of raters (Brown & Geis, 1984; Fiske and Taylor, 1991). These studies of social cognition indicate that informant and victim gender would both impact the ratings of victim psychopathology generated by psychological autopsy informants.

Gender bias has been shown to operate specifically in studies of observer ratings of the mental health status of others. Identical behaviors observed between genders are perceived differently with regard to whether the observer would judge the behavior to be normal or pathological. Simply put, people have different criteria for what is "normal" or "abnormal" for men and what is "normal or "abnormal" for women (Coie, Pennington & Buckley, 1974). Such biases have been elicited in general studies of sex-role stereotypes and with clinical populations. Clinicians have been shown to endorse different attributes of mental health for males and females. When asked to generate a gender-free profile of a mentally healthy person, the attributes listed resembled the clinician’s profile of healthy men more closely than their profile of healthy women (Broverman, Broverman, Clarkson, Rosenkrantz, & Vogel, 1970).

Gender differences have also been observed in studies
that have examined beliefs and attitudes about suicide. However, when evaluative judgements of suicidal people have been compared between genders the results have been inconsistent. Women have been shown to be more likely than men to hold the belief that psychopathologic symptoms are present prior to a suicide attempt, and to be more empathic toward suicidal individuals (Wellman & Wellman, 1986). In a study of college students' attributions, subjects judged completed suicide to be more masculine and attempted suicide to be more feminine (Lewis & Shepeard, 1992). Deluty (1989) obtained conflicting findings to the Wellman and Wellman (1986) study when he examined the effect of evaluator and victim genders upon evaluators' ratings of the acceptability of a suicide and found females to be less "sympathetic." Undergraduate students were presented with brief vignettes describing the life circumstances of the protagonist and supplying the information that he or she had decided to commit suicide. Subjects completed evaluative rating scales (e.g., "wise-foolish," "right-wrong") regarding the suicidal individual and his or her decision to commit suicide. By manipulating the gender of the protagonist, Deluty was able to measure the effect of same and different gender pairs of protagonist and evaluator and to assess the impact of gender upon raters' evaluative statements regarding this suicidal individual. Suicide by females was evaluated more negatively by both genders than suicide by males, and female evaluators
were particularly harsh in their evaluations of the suicidal females. In sum, females who planned to end their lives were judged to be weaker, more "wrong", and acting in a manner less permissible then their male counterparts. Lewis and Shepheard (1992) reported similar findings in a study that manipulated the gender of completers and the context of their suicides (relationship versus athletic failure) described in a vignette study. Undergraduate subjects in this experiment rated female suicide completers as more psychologically distressed than their male counterparts, independent of the context of their suicides. In a similar investigation Lewis, Atkinson and Shovlin (1993) presented undergraduate subjects with vignettes about a peer-aged individual varying the actors' genders, use of alcohol, and the outcome (suicide/no suicide) of the vignette. In this study, the gender of the subject/evaluators interacted with the actors' use of alcohol, such that female raters rated suicide completers of both genders as being less well-adjusted when alcohol use was noted.

In sum, these studies suggest that men and women hold gender specific attitudes and beliefs about suicide, its causes, its acceptability, and what the act indicates about the emotional and psychological state of the victim. Although the direction of these gender differences in judgements and beliefs about suicide has not been firmly established, they would predict dissimilarities in male
versus female ratings of psychopathology in suicide completers, particularly if the suggestion that these ratings would be influenced by internally held beliefs is accurate.

A final variable that may influence informant testimony is his or her age. Attitudes toward death, suicide, and reasons for the latter may differ between youthful informants and more mature associates of the victim. The availability and use of teenaged peer informants has been cited as an advantage of the adolescent psychological autopsy, as they are considered to have had unique access to specific details of the adolescent's life (Brent, 1989; Rich, Young, & Fowler, 1986). It is unclear, however, that developmental variables (e.g., self-perceived invulnerability of youth), attitudes about suicide unique to this youthful population, or their strong identification with the victim as a peer would not outweigh any of these advantages. If subject in their recollections of an individual who has committed suicide to any biases of attitude or attribution, however, as is posited by this discussion to be true of all informants, it is possible that adolescents may harbor biases unique to their age group or cohort. Suicide attitude research has demonstrated that evaluators respond differentially to the suicides of different age groups, generating different reasons for the suicide, and that evaluator age is a significant factor in the types of attributions generated (Boldt, 1982; Sahin, Sahin, & Tumer, 1994). By using a
design that describes fictitious suicide victims that are peers of the subjects, this study specifically examined the attitudes of youthful evaluators rating people similar to themselves.

**Detection of Informant Bias in the Psychological Autopsy**

The considerable evidence of the fallibility of human memory supports concerns regarding the use of psychological autopsy informants and calls into question the validity of the reports elicited from them. Studies in the areas of cognitive psychology and social cognition have systematically identified the factors that can compromise the accuracy of people's recollection of events, situations, and other people. Manipulation of a range of variables, including the context in which information is presented, the inclusion or exclusion of critical pieces of information, such as outcome, and subjects' a priori notions and belief systems have been shown to impact what is generated by subjects as recalled material (i.e., material to which they report they were actually exposed) (Loftus & Loftus, 1980).

Although the psychological autopsy method has become an increasingly common approach to the study of suicidal lives, suicidologists acknowledge that various forms of informant bias may undermine the validity of the data rendered by such studies (Barraclough, et al., 1974; Brent, 1989; Brent, Perper, Moritz, Allman et al., 1993; Shaffer et al., 1971.)
Barraclough et al. (1974) posited a two-tailed pattern of distortion in informant reports. They suggested that the survivors may: (1) idealize the victim, and report an absence or minimum of psychiatric symptomatology; or (2) exaggerate the presence of psychopathology strictly on the basis of the suicidal behavior or as a way of "explaining" the event. Alternatively, overrating of symptomatology may emerge because of a halo effect of the suicidal outcome, in which case the suicide itself is treated as de facto evidence of a victim's mental illness.

Among the psychological autopsy studies reviewed in this discussion, informant selection has been made strictly by virtue of his or her relationship to the victim. Eligibility or suitability has not been formally evaluated, although when reaching best estimate diagnoses, anecdotal information regarding the comportment of informants during the interviews may contribute to the researchers' level of confidence in admitting their testimony or to the weight assigned to it. This uncontrolled approach, however, may simply serve to superimpose the biases of the investigators upon those of their informants. One way to address this potential confound with greater precision and control would be to profile the informants along some of the dimensions that may impact the quality of their testimonies. Rudestam (1979) has suggested that rating scales be completed regarding the informants to assess them for their levels of openness, emotionality,
specificity, and reliability. Shaffer et al. (1971) noted that the degrees of informant knowledge, neutrality, candor, and cooperation all impact the validity of their testimonies and suggested that the relationships between these variables and informants' reports be examined. The information from any such evaluations could then be developed for application as a means of informing the psychological autopsy procedure and discriminating between tenable and untenable participants. A weighting system of some kind would be superior to the utilization of simple consensus among informants, which are suspect because of differences between informants on the above mentioned variables. Empirical support for the suggested impact of raters' internal states was elicited by Stillion, McDowell, and Shamblin (1984) when they examined attitudes toward suicide. Twelfth-grade respondents' degree of sympathy and empathy varied as a function of their own self-concepts, depression scores, and concern with death.

Extending the hindsight paradigm pioneered by Fischoff (1975) may be an efficient way to address the confound of differential response styles and provide a simple method of detecting psychological autopsy informant bias. Post hoc likelihood ratings may be a means to obtain a measurable index of the tendency of an informant to distort information and may serve as a tool to enhance the internal validity of the autopsy. A first step toward this end would be
conducting a test of the association between hindsight ratings and response pattern. If such a relationship exists, the next step would be the assessment of the patterns of differences from actual data contained in the testimony of high versus low hindsight raters. Hindsight ratings may ultimately represent a simple time and cost effective screen for the presence, direction, and strength of informant bias.

Statement of Problem and Hypotheses

The reviewed literature suggests that the recollections of psychological autopsy informants may be subject to biases derived from their attitudes and beliefs about suicide and that these cognitive sets vary according to gender, their outcome knowledge regarding the suicidal event, their own gender, and the gender of the victim.

The primary purpose of this study was to investigate the effect of knowledge of suicide on the peer informants' ratings of psychological disturbance in the suicide victims, and to determine whether, if present, such a bias would be more pronounced for ratings of specific psychiatric disorders. The second objective was to examine informants' ability to disregard outcome knowledge in making postdictive judgements about the likelihood of an individual committing suicide. Finally, an exploratory analysis was conducted to ascertain the potential utility of posing a hindsight question to informants as a screening measure for their
response styles. Specifically, the following questions were addressed: (1) Compared with subjects who have no outcome knowledge, do subjects with knowledge of a victim’s suicide differ significantly in their ratings of the level of psychological distress present in the same person? (2) If present, do such distortions vary as a function of the method of suicide? (3) If present, do such distortions vary as a function of the gender of the victim or of the informant? (4) Are people able to make predictive judgments about suicide, setting aside their knowledge of this as an outcome? and 5) Do evaluator ratings of psychological distress vary as a function of their likelihood rating of a suicidal outcome?

The main hypothesis of the study predicted that subjects’ knowledge of a suicide would produce higher ratings by them of psychopathology in the victim. Further analyses were conducted to explore potential influences of gender and method of suicide. Additionally, it was hypothesized that subjects exposed to the suicidal outcomes would render higher retrospective probabilities of the likelihood of the suicide (despite being instructed to disregard this outcome information) than would subjects in the control conditions. Finally, it was predicted that among subjects who are aware of the suicidal outcome those who retrospectively endorse high probabilities of the victims’ suicides would recall significantly higher ratings of psychopathology than subjects who endorse low probabilities of suicidal outcomes.
CHAPTER II

METHOD

Overview of Design

The study design consisted of two components, a study phase and a test phase. During the study phase subjects were provided with written materials about a peer aged individual; a completed thoughts, feelings, and behaviors checklist and a life history vignette. In order to test the impact of knowledge of a suicide outcome and actor gender, experimental manipulations of these variables were made within the study materials. Upon reading the materials, subjects returned them and then began the test phase. Two tasks were completed during this phase: a memory task which required subjects to reconstruct the ratings on the thoughts, feelings, and behaviors checklist; and a retrospective judgement task, which required subjects in three of the four outcome groups to rate the likelihood of the outcome that they observed having occurred. Subjects in the fourth outcome condition were naive, and thus rated the likelihood of the outcomes without the benefit of knowledge of their occurrence.
Subjects

One hundred-seventy undergraduate psychology students were recruited from the Loyola University subject pool and undergraduate psychology courses. Partial course credit was given for the students' participation in the study. Subjects were randomly assigned to one of eight experimental conditions. Subjects' genders (males, n=66; females, n=104) were used to further establish group membership into the resultant sixteen groups. Subjects were tested in groups which ranged in size from ten to thirty subjects, however, they completed the experimental procedures individually. Subjects were instructed orally by the examiner. (See appendix A for verbatim instructions).

Experimental Materials

The thoughts, feelings, and behaviors checklist used in this research was derived for the purpose of this study from the SCL-90-R, a commonly available, widely used measure (Derogatis, 1983). It provided the subjects with information regarding the psychological functioning of the person of interest (i.e., the actor in the vignette) and was presented to subjects as having been completed by the actor him- or herself. The SCL-90-R was modified in three ways to adapt to the purposes of the present study. First, 18 "dummy" items (see appendix B) were written and assigned extreme ratings so that during the study phase subjects would, in effect, be
given "permission" to assign extreme scores during the test phase. This was done to limit the risk of creating a response set around the mid-range of the rating scale without making the actor seem pathological in terms of the items listed directly from or derived from the actual SCL-90-R. The second modification was made to limit the potential for the type of response set that might be elicited by using a scale that is strictly focused on psychopathology and to reduce the threat of subjects being cued to the hypothesis of the study. This was achieved by modifying one half of the actual items, all of which inquire into psychopathological symptoms, by converting them to adaptive correlate behaviors (i.e., reversing their valence). For example, rather than asking for a rating of frequency of bad dreams, a rating for the frequency for pleasant dreams would be substituted. Finally, the five point scale of the SCL-90-R was expanded to a seven point scale to increase the sensitivity of the measure to differences in ratings, that is, to prevent clustering of subjects' ratings at or near the mid-point of the scale. This scale asked for frequency ratings (ranging from "never or almost never" to "always or almost always") of the thoughts, feelings, and behaviors contained in the checklist. It should be noted that in light of these modifications to the SCL-90-R (Derogatis, 1983), the reliability and validity data reported for the instrument would not be applicable to the present study.
Values on the completed thoughts, feelings, and behaviors inventory used in the test phase were semi-randomly assigned to the checklist items. Of the actual and derived items from the SCL-90-R ratings of 2, 3, and 4 were assigned by randomly drawing their values from a potential pool of 30 occurrences of each value. More extreme ratings were assigned only to the 18 dummy items. Values of 1, 5, 6, and 7 were randomly assigned from potential pools of 8, 3, 3, and 4 of each of these values, respectively.

A narrative description (vignette) of the life history the same person was also provided. (See appendix B). This vignette was a non-specific profile of someone who might easily be a classmate of the subjects, and included information about his/her academic, family, social, and romantic functioning. The vignette was varied only with regard to the gender of the actor, such that one half of the subjects were provided a vignette regarding a male actor, Bob, and the remaining half of the subjects were provided with a vignette regarding a female actor, Liz.

Subjects in three of the four outcome conditions were provided with a brief outcome statement regarding the actor about whom they read during the study phase of the experiment. Thus one of four possible outcomes were presented: no outcome, suicide by gunshot, suicide by carbon monoxide poisoning, and accidental death in an automobile accident.
Procedures

Subjects were initially provided with a packet containing the entire set of experimental materials, which were segregated into four parts labeled A through D: (A) the completed thoughts, feelings, and behaviors checklist (i.e., the modified SCL-90-R); (B) the life history vignette; (C1) the outcome statement; (C2 or D) the uncompleted thoughts, feelings, and behaviors checklist; and (C2 or D) the hindsight question. Each section began with a cover sheet which instructed subjects not to begin the section until instructed to do so. Sections A and B were presented first and second, respectively, to all subjects. After an oral introduction to the experiment as one that would examine people's ability to remember details about other people, subjects were directed to section A (the checklist purportedly completed by the person who was the object of the study) and asked to read it carefully such that they would be prepared to answer questions about it without referring back to it. Upon collection of the checklist, subjects were instructed to read the vignette and once again asked to do so carefully because they were going to be asked to return it and answer questions about it. Upon collection of these materials the test phase commenced.

The order of the experimental task sections was varied such that one half of the subjects completed the checklist prior to the hindsight question and one half of the subjects
completed these measures in the reverse order. The purpose of this manipulation was to balance any practice effects of completing the test materials that may have been present. After the study phase, subjects were instructed to proceed with section C, which began with a statement (section C-1) regarding the purpose of the study and presented outcome information to those subjects who were in three conditions in which outcome statements were provided (see appendix B). Section C also contained either a blank form of the thoughts, feelings, and behaviors checklist or the hindsight likelihood judgement question (part C-2). Section D contained whichever of the two test sections that was not presented as section C-2.

**Groups**

For the purpose of testing the hypotheses that predicted effects of outcome knowledge, actor gender, and informant gender upon psychopathology ratings, groups were formed by the crossing of the three independent variables of outcome of vignette (4 levels), gender of actor in the vignette (2 levels), and gender of the experimental subjects (2 levels), rendering 16 groups (4x2x2 design). Subjects were randomly assigned to levels of the variables of gender of actor and outcome.

The experimental and control groups were defined by levels of the outcome condition. Experimental conditions
were the outcomes of suicide by gunshot and suicide by carbon monoxide, i.e., two variations of the general experimental outcome of suicide. Distinction between two methods of suicide was made in order to detect the potential effects of a highly violent versus a nonviolent method of suicide and the potential interaction of the levels of suicide method with the genders of the actors and the genders of the experimental subjects.

Control conditions were "no outcome" to the life history vignette, or death by automobile accident. The latter control group was included to determine whether an alternative death outcome would impact subjects' ratings of the mental health status of the actor in the vignette and to allow for interpretation of findings as being confined to death by suicide, rather than having been caused by a generic death effect.

For the purpose of testing the hypothesis that predicted that outcome knowledge would produce higher retrospective ratings of the probability of suicide, three levels of outcome; suicide by gunshot, suicide by carbon monoxide, and no outcome were crossed with the two levels each of informant gender, and actor gender, yielding a 3x2x2 design.

The hypothesis that predicted that subjects' retrospective likelihood ratings would correspond to their response style on the thoughts, feelings, and behaviors checklist was tested by grouping subjects who were exposed to
the suicidal outcomes according to their hindsight likelihood statuses. Retrospective suicide likelihood ratings were elicited from all subjects in the outcome conditions of suicide by gunshot and suicide by carbon monoxide poisoning. High and low hindsight status groups were drawn from the pool of all subjects who made retrospective likelihood ratings (N=86; M=38.54; SD= 23.76). High and low hindsight status groups consisted of subjects who rated the likelihood of suicide 1SD or more above the mean rating of all raters (n=16) and 1SD or more below the mean of all possible raters (n=20), respectively.

**Dependent Measures**

The thoughts, feelings, and behaviors checklist derived from the 90 items of the SCL-90-R was used to measure the levels of psychological distress recalled by the subjects regarding the actor in the vignette. Ratings on the 18 dummy items were not included in the statistical analyses. The values for the 45 items that were modified to be positively valenced included in the final data analyses were adjusted for directionality so that from the completed protocols assigned values would correspond to the ratings of the symptoms of psychopathology. Thus, for instance, a rating of 1 became 7, and a rating of 7 became 1. Recoding of other values were as follows: 2=6, 3=5, 4=4.

Subjects' ratings the individual subscales were computed
as the mean frequency ratings of the items that comprised the individual scales. The total numbers of items contributing to the individual scales are as follows: somatization, 12; obsessive compulsive, 10; interpersonal sensitivity, 9; depression, 13; anxiety, 10; hostility, 6; phobic anxiety, 7; paranoid ideation, 6; psychoticism, 10. The global psychological distress scores were based upon the mean of the combined ratings of the 83 items contained in the subscales and those of the 7 additional items that appear in the SCL-90-R.

The impact of the levels of the independent variables of outcome, gender of actor, gender of informant, and hindsight status upon the recall of the global rating of psychological distress rendered by the thoughts, feelings and behaviors checklist were assessed. Additionally, the influence of the levels of the independent variables upon recall of the ratings of the nine subscales of somatization, obsessive-compulsive, interpersonal sensitivity, depression, anxiety, hostility, phobic anxiety, paranoid ideation, and psychoticism were assessed individually.

The second dependent measure was the likelihood ratings generated by the subjects. These were probability ratings that ranged from 0% to 100% which estimated the likelihood of the actor in the vignette experiencing a particular outcome. Subjects provided with outcome information (i.e., accidental death, suicide by gunshot, suicide by carbon monoxide
poisoning) rated the likelihood of the outcome event which they knew had taken place. In making this judgement, subjects were instructed to consider all of the information provided to them except the outcome in making this postdictive judgement, that is, they were asked to disregard their knowledge of the death (accidental or suicidal) when making this post hoc judgement. Subjects in the “no outcome” condition were given no special instructions to disregard information, but asked only to make the predictive judgement based upon the information about the actor which they had read. Subjects in this condition were asked to rate the likelihood of five additional life events occurring. These were distractor items that were presented to minimize the demand characteristics that may have been created by asking about the likelihood of suicide alone. These items are presented in appendix B.
CHAPTER III

RESULTS

Outcome Knowledge and Genders: Psychopathology Ratings

The first hypothesis predicted that subjects provided with suicidal outcome information would remember the actor in the vignette as having more symptoms of psychopathology than would those subjects not provided with this outcome. It was also hypothesized that these differences would vary significantly as a function of the genders of the informants (i.e., the experimental subjects) and the genders of the actors in the vignettes. The dependent measures used to test the effects of outcome knowledge, subject gender, and actor gender upon subjects' recall of ratings of actors' level psychological distress were the global and individual sub-scale (somatization, obsessive-compulsive, interpersonal sensitivity, depression, anxiety, hostility, phobic anxiety, paranoid ideation, and psychoticism) ratings on the thoughts, feelings, and behaviors checklist.

Ten 4x2x2 (outcome x informant gender x actor gender) univariate analyses of variance were conducted to assess the overall effects of these independent variables upon subjects' recall of the actors' self-reports on the global scale and
the nine dimensions of psychopathology. Of the ten analyses conducted, significant two-way interactions (gender of actor x vignette outcome) were observed for global psychological distress, $F(3,151)=2.91$, $p<.05$, depression, $F(3,153)=3.52$, $p<.05$, and interpersonal sensitivity, $F(3,154)=5.26$, $p<.05$. Main effects of vignette outcome were observed on the depression, $F(3,153)=2.74$, $p<.05$; somatization, $F(3,153)=3.94$, $p<.05$; and obsessive-compulsive, $F(3,154)=2.80$, $p<.05$, scales. The five remaining analyses of variance were nonsignificant. It should be noted that if a family-wise Bonferroni adjustment is made for the total number of analyses conducted (10), the significance level of .005 would be met only by the outcome observed on the interpersonal sensitivity scale for, which the observed $F$ exceeded the critical value at $\alpha=.002$. Bearing this in mind, the remaining significant observed results are interpreted with caution.

The significant interaction of outcome and actor gender on recall of the global psychological distress scale was probed with Newman-Keuls post hoc comparisons. The results indicated three significant differences: The male actors/gunshot suicide outcome were recalled as significantly more distressed than the female actors/no outcome $q(7,151)=.214$, $p<.05$. Male actors/gunshot suicide outcome were recalled as significantly more distressed than female actors/accidental death outcome, $q(8,151)=.218$, $p<.05$. 
Finally, male actors/gunshot suicide outcome were recalled as significantly more distressed than the male actors/carbon monoxide suicide outcome $g(6, 151) = .204, p < .05$. Means and standard deviations are presented in Table 1.

For recall of ratings of interpersonal sensitivity Newman Keuls post hoc comparisons indicated the following significant differences: female actors/carbon monoxide suicide outcome were remembered as significantly more interpersonally sensitive than male actors/carbon monoxide suicide outcome $g(7, 154) = .401, p < .05$. Male actors/accidental death outcome were rated significantly more interpersonally sensitive than male actors/carbon monoxide suicide outcome $g(8, 154) = .455, p < .01$. Means and standard deviations are presented in Table 2.

For recall of ratings of depression, Newman Keuls post hoc comparisons detected the following significant differences: male actors/gunshot suicide outcome were remembered as significantly more depressed than female actors/no outcome condition $g(8, 153) = .363, p < .05$ and male actors/gunshot victims were rated significantly more depressed than male actors/accidental death outcome $g(3, 153) = .272, p < .05$. Subjects' recall of ratings of depression regarding the male actor/gunshot suicide outcome were higher than those of female actor/accident outcome, with this difference being equal to but not exceeding the critical
**Table 1**

**Means and Standard Deviations of Global Psychological Distress Ratings**

<table>
<thead>
<tr>
<th>Actor</th>
<th>No OC</th>
<th>GSS</th>
<th>COS</th>
<th>ACC</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bob</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>n</td>
<td>20</td>
<td>21</td>
<td>23</td>
<td>19</td>
</tr>
<tr>
<td>M</td>
<td>3.565</td>
<td>3.746</td>
<td>3.542</td>
<td>3.598</td>
</tr>
<tr>
<td>SD</td>
<td>.295</td>
<td>.281</td>
<td>.233</td>
<td>.238</td>
</tr>
<tr>
<td>Liz</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>n</td>
<td>21</td>
<td>20</td>
<td>23</td>
<td>20</td>
</tr>
<tr>
<td>M</td>
<td>3.532</td>
<td>3.599</td>
<td>3.672</td>
<td>3.528</td>
</tr>
<tr>
<td>SD</td>
<td>.194</td>
<td>.193</td>
<td>.209</td>
<td>.261</td>
</tr>
</tbody>
</table>

NoOC=No Outcome  
GSS= Gunshot Suicide Outcome  
COS= Carbon Monoxide Suicide Outcome  
ACC= Accidental Death Outcome

*Note: Higher ratings indicate recall of higher distress.*
Table 2

**Means and Standard Deviations of Interpersonal Sensitivity Ratings**

<table>
<thead>
<tr>
<th>Actor</th>
<th>Outcome</th>
<th>No OC</th>
<th>GSS</th>
<th>COS</th>
<th>ACC</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bob</td>
<td></td>
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<td></td>
<td></td>
</tr>
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<td>n</td>
<td>21</td>
<td>21</td>
<td>23</td>
<td>19</td>
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</tr>
<tr>
<td>M</td>
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<tr>
<td>SD</td>
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<tr>
<td>Liz</td>
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<tr>
<td>M</td>
<td>3.841</td>
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<tr>
<td>SD</td>
<td>.427</td>
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<td>.315</td>
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</table>

NoOC=No Outcome
GSS= Gunshot Suicide Outcome
COS= Carbon Monoxide Suicide Outcome
ACC= Accidental Death Outcome

*Note: Higher ratings indicate recall of higher distress.*
value $g(7, 153) = .337, p = .05$. Means and standard deviations are presented in Table 3.

The main effects of outcome observed for the somatization and obsessive compulsive subscales were probed with Newman-Kuels post hoc comparisons. Because of the interaction of outcome and actor gender observed for depression, the main effect of outcome on this scale was not probed. On ratings on the somatization scale the suicide by gunshot outcome actors were remembered as having been significantly more somatizing than the no outcome actors $g(4, 154) = .201, p < .05$. Likewise, suicide by gunshot actors were rated as significantly more somatizing than actors who died an accidental death $g(3, 154) = .226, p < .05$. Means and standard deviations are presented in Table 4. Newman-Kuels post hoc comparisons of the means for the observed main effect of outcome detected no significant differences for obsessive-compulsive ratings.

The above results provide partial support for the hypothesized interaction of type of outcome knowledge and actor gender upon informants' recall of a victim's self-reported level of psychological distress. This support was evidenced by significantly higher recall of global psychological distress in male gunshot suicide victims than in female actors for whom no outcome was provided, female actors who died an accidental death and male actors who committed suicide by carbon monoxide poisoning. Further
### Table 3

**Means and Standard Deviations of Depression Ratings**

<table>
<thead>
<tr>
<th>Actor</th>
<th>NoOC</th>
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<th>COS</th>
<th>ACC</th>
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<tbody>
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<td></td>
<td></td>
</tr>
<tr>
<td>n</td>
<td>21</td>
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<td>23</td>
<td>19</td>
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<tr>
<td>M</td>
<td>3.645</td>
<td>3.960</td>
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<tr>
<td>SD</td>
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<td>.333</td>
<td>.397</td>
</tr>
<tr>
<td>Liz</td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>n</td>
<td>21</td>
<td>20</td>
<td>23</td>
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</tr>
<tr>
<td>M</td>
<td>3.597</td>
<td>3.685</td>
<td>3.776</td>
<td>3.623</td>
</tr>
<tr>
<td>SD</td>
<td>.250</td>
<td>.250</td>
<td>.431</td>
<td>.362</td>
</tr>
</tbody>
</table>

NoOC=No Outcome  
GSS= Gunshot Suicide Outcome  
COS= Carbon Monoxide Suicide Outcome  
ACC= Accidental Death Outcome

*Note:* Higher ratings indicate recall of higher distress.
Table 4

Means and Standard Deviations of Somatization Ratings

<table>
<thead>
<tr>
<th>Outcome</th>
<th>NoOC</th>
<th>GSS</th>
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</thead>
<tbody>
<tr>
<td>N</td>
<td>41</td>
<td>41</td>
<td>46</td>
<td>41</td>
</tr>
<tr>
<td>M</td>
<td>3.331</td>
<td>3.622</td>
<td>3.458</td>
<td>3.396</td>
</tr>
<tr>
<td>SD</td>
<td>.407</td>
<td>.517</td>
<td>.307</td>
<td>.431</td>
</tr>
</tbody>
</table>

NoOC=No Outcome
GSS= Gunshot Suicide Outcome
COS= Carbon Monoxide Suicide Outcome
ACC= Accidental Death Outcome

*Note: Higher ratings indicate recall of higher distress.*
support was provided by the subjects' recall of significantly higher ratings of interpersonal sensitivity in female actors who committed suicide by carbon monoxide poisoning than in males who committed suicide by the same method. Subjects' recall on the depression scale were also consistent with the hypothesized interaction of outcome and actor gender. Male actors who committed suicide by gunshot were recalled as having rated themselves as more depressed than female actors for whom no outcome was provided and male actors who died in automobile accidents. The study results also provided partial support for the hypothesized main effects outcome. Gunshot suicide victims were recalled as significantly more somatizing than actors who died an accidental death and actors for whom no outcome information was provided.

**Hindsight Likelihood Ratings**

The second hypothesis of this study predicted that subjects who were presented with a suicide outcome would assign a higher likelihood of the event having occurred, despite being instructed to disregard their knowledge of the suicide. Additionally, it was predicted that this bias would interact with the genders of the actors and the genders of the informants. A 3x2x2 analysis of variance was conducted with the subjects who were instructed to rate the likelihood of suicide (N=116) to test the effects of knowledge of suicidal outcome, gender of informants (subjects), and gender
of actors upon subjects' postdictive judgements of the likelihood of suicide. Results of this analysis were nonsignificant at the levels of main effects of outcome, main effects of actor gender, and two- and three-way interactions of informant gender, actor gender, and outcome, thus failing to support the prediction of an interaction between suicide outcome knowledge and genders.

An unpredicted main effect of informant gender upon hindsight ratings was observed, with females rating the likelihood of suicide as being more likely in general (i.e., across all outcome conditions) than males $F(1,116)=12.556, p<.01$. Thus, independent of outcome, female subjects ($n=79; M=40.48; SD=22.75$) judged suicide as more likely for the actors in the vignettes than did male subjects ($n=49; M=25.63; SD=22.98$).

Hindsight Status

The third hypothesis tested in this study predicted that subjects who made hindsight ratings that fell at the extremes of the distribution of this rating would recall actors' psychological distress ratings correspondingly. That is, high retrospective suicide likelihood ratings would be associated with generation of high psychological distress ratings. The subjects included in these analyses were those who were exposed to the outcome of the actors' suicides, and who fell at the extremes of the distribution of the
likelihood ratings (N=36). Because of the gender imbalance noted upon formation of the hindsight status groups and the potential confounding of subject gender and hindsight group status, the independent variable of hindsight rating status (i.e., high versus low) was crossed with subject gender and analyzed in 2x2 factorial analyses of variance. Ten analyses were conducted to test the effects of these variables and their interactions upon ratings of global psychopathology, somatization, obsessive-compulsive, interpersonal sensitivity, depression, anxiety, hostility, phobic anxiety, paranoid ideation, and psychoticism.

The omnibus tests for a main effect of subject gender and an interaction between subject gender and hindsight group status were nonsignificant. Significant main effects of hindsight status were detected for subjects' ratings of actors' global psychological distress, $F(1,32)=9.395$, $p<.01$; somatization, $F(1,32)=5.636$, $p<.05$; hostility, $F(1,32)=(10.717)$, $p<.01$; phobic anxiety, $F(1,32)=4.406$, $p<.05$; and psychoticism, $F(1,32)=6.887$, $p<.05$. A significant interaction between hindsight status and informant gender was observed on subjects' recall of ratings on the global psychological distress scale; $F(1,32)=6.478$, $p<.05$. Newman-Kuels probing of this interaction indicated that high hindsight status males recalled significantly higher ratings of global psychological distress than high hindsight status females, $g(2,32)=.281$, $p<.01$; low hindsight status females,
All of the differences observed were in the hypothesized direction; that is, high hindsight status subjects generated significantly higher ratings of the actors on these dimensions than did low hindsight status subjects. Means and standard deviations for subjects' recall of victims' global distress are presented in Table 5. Means and standard deviations for subjects' recall of ratings of somatization, hostility, psychoticism, and phobic anxiety are presented in Table 6. It should be noted that when subjected to the stricter criterion of significance with a Bonferroni adjustment of alpha=.05/10 this significance level of .005 is exceeded only by the F values observed for the differences in subjects' recall of global psychological distress and hostility ratings. Therefore, conclusions based upon the more lenient criteria must be considered with caution.

Tests of main effects of hindsight status upon the subjects' ratings of the actors' levels of obsessive compulsive symptoms, interpersonal sensitivity, depression, anxiety, and paranoid ideation were nonsignificant.

The results of these analyses provide partial support for the hypothesized relationship between informants' hindsight rating styles and recall of psychological distress in the suicide victims. High hindsight rating status was associated with recall of significantly higher levels of
Table 5

**Means and Standard Deviations of High and Low Hindsight Status Subjects' Recall of Global Psychological Distress Ratings**

<table>
<thead>
<tr>
<th>Hindsight Status</th>
<th>Male</th>
<th>Female</th>
</tr>
</thead>
<tbody>
<tr>
<td>High</td>
<td></td>
<td></td>
</tr>
<tr>
<td>n</td>
<td>5</td>
<td>11</td>
</tr>
<tr>
<td>M</td>
<td>3.955</td>
<td>3.674</td>
</tr>
<tr>
<td>SD</td>
<td>.455</td>
<td>.093</td>
</tr>
<tr>
<td>Low</td>
<td></td>
<td></td>
</tr>
<tr>
<td>n</td>
<td>10</td>
<td>10</td>
</tr>
<tr>
<td>M</td>
<td>3.535</td>
<td>3.635</td>
</tr>
<tr>
<td>SD</td>
<td>.174</td>
<td>.175</td>
</tr>
</tbody>
</table>

*Note: Higher ratings indicate recall of higher distress.*
Table 6

Means and Standard Deviations of High and Low Hindsight Subjects’ Ratings of Somatization, Hostility, Psychoticism, and Phobic Anxiety

<table>
<thead>
<tr>
<th>Hindsight Status</th>
<th>n</th>
<th>SOM</th>
<th>HOS</th>
<th>PD</th>
<th>PHOB</th>
</tr>
</thead>
<tbody>
<tr>
<td>High</td>
<td>16</td>
<td>3.792</td>
<td>3.500</td>
<td>3.844</td>
<td>3.491</td>
</tr>
<tr>
<td>M</td>
<td></td>
<td>.602</td>
<td>.404</td>
<td>.510</td>
<td>.597</td>
</tr>
<tr>
<td>SD</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Low</td>
<td>20</td>
<td>3.454</td>
<td>3.092</td>
<td>3.590</td>
<td>3.207</td>
</tr>
<tr>
<td>M</td>
<td></td>
<td>.347</td>
<td>.344</td>
<td>.319</td>
<td>.485</td>
</tr>
<tr>
<td>SD</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

NoOC=No Outcome
GSS= Gunshot Suicide Outcome
COS= Carbon Monoxide Suicide Outcome
ACC= Accidental Death Outcome

Note: Higher ratings indicate recall of higher distress.
global psychological distress, somatization, hostility, phobic anxiety, and psychoticism than low hindsight status. High hindsight status males recalled significantly more global psychological distress than did high hindsight status females, low hindsight status females, and low hindsight status males.
CHAPTER IV
DISCUSSION

The present research was designed to examine the threat posed by informant bias to the internal validity of the psychological autopsy method of investigating the psychological status of suicide victims. The independent variables hypothesized to be the locus of this bias were informant knowledge of the suicide, gender of the victim, and gender of the informant. These variables were hypothesized to influence raters' (informants') recall of psychological distress in the victims. Additionally, it was hypothesized that in retrospect, informants who were aware of the victim's suicide would rate this outcome as having been more likely than would naive subjects, despite being asked to disregard their knowledge of the suicide. Finally, it was hypothesized that when subjects who were in possession of the suicidal outcome information were grouped by extreme responses (high versus low) to the hindsight question, group membership would predict the degree of psychological distress in the suicide victim recalled by the subjects.
Biased Recall of Psychological Distress

The results of this study provide partial support for the hypothesized impact of the knowledge of a suicide and the gender of the suicide victim upon respondents' recall of maladaptive thoughts, feelings, and behaviors in the victim. On subjects' recall of the victim's self-report on one scale, somatization, a significant main effect of the outcome manipulation was observed. On subjects' recall of three additional scales, global distress, depression, and interpersonal sensitivity, an interaction of outcome and actor gender emerged. These findings and their implications are elaborated below.

Significant differences in subjects' ratings of global psychological distress emerged in the pattern hypothesized. Specifically, these differences were observed in the context of an interaction of the independent variables of gender of the actor and outcome of the vignette. Independent of their own genders, the subjects who rated male actors who committed suicide by gunshot remembered these actors as having significantly more global psychological distress than actors in three of the other conditions: female actors for whom no outcome was reported, female actors who died in an automobile accident, and male actors who died by carbon monoxide poisoning. This is consistent with the overall hypothesis which predicted that knowledge of suicide would influence memories in the direction of remembering more psychological
distress, and indicates that the gender of the victim and the method of suicide are pivotal pieces of information to the raters, contributing to the pattern of recall observed.

Subjects' memories of higher global distress ratings in the context of a gunshot suicide makes intuitive sense. Self-injury by gunshot is virtually certain to result in a completed suicide. The carbon monoxide method may suggest greater ambivalence about death and perhaps more reasons or desire left to live. The use of a firearm may have implied to these subjects a greater determination for the victim to end his life, one that is perhaps not reflected by suicide by carbon monoxide poisoning, a process which is slower and presents greater potential for the victim to be discovered and the attempt thwarted. If the different methods were understood in this way by the subjects, higher intentionality may have suggested to them that a greater level of internal distress was being experienced by the male gunshot victims than the male carbon monoxide victim. These victims were also remembered as being more globally distressed than females for whom no outcome was provided and females who died an accidental death. This pattern of recall also lends partial support for the hypothesized impact of the knowledge of suicide and victim gender, indicating that the greatest impact of this information is in the case of males who commit suicide by gunshot. The confinement of these elevations to male victims suggests that subjects hold different belief
sets regarding the psychological status of male and female suicide victims, and that these beliefs sets impact recall accordingly. Potential sources of these gender differences are discussed in greater detail below.

The pattern of differences observed on subjects' recall of ratings of depression was similar to those of the global distress ratings, with significant differences emerging as a result of the elevated ratings of male gunshot victims. Specifically, these victims were remembered as having experienced more depression related thoughts, feelings, and behaviors than female actors for whom no outcome information was provided and male actors who died an accidental death. A difference between these male suicides and females who died in an automobile accident approached significance, the higher ratings of depression being assigned to the male gunshot victims. As with the global ratings, partial support for the main hypothesis of the study is lent by these results, and a similar rational can be used to explain them since it would be difficult to reframe a self-inflicted gunshot wound in this context as anything but one that was motivated by an intent to die. If, in fact, this was the interpretation of the subjects, the results suggest that high intentionality and psychological distress are thought to have a positive correlation when male suicide victims are concerned. Elevated depression ratings, in particular, are consistent with commonly held lay and professional beliefs about the
psychological status of suicide victims (Brent, Perper, Moritz, Allman et al., 1993, Domino, 1990; Marks, 1989). Thus, these elevations are in accord with the assertion of this study that subjects would use common beliefs to fill in the blanks of their memories, and it is logical that the depression scale would be one of those that is elevated in subjects' recall of the suicide victims.

Also in the context of an actor gender and outcome interaction, female actors in the suicide by carbon monoxide condition were recalled as having been significantly more interpersonally sensitive than male actors who committed suicide by the same method. The recall of elevated interpersonal sensitivity ratings with respect to these female actors may be explained in two ways. It may imply that these subjects understood interpersonal sensitivity as either a motivator for the method of suicide chosen or a reason for the suicide itself. With respect to the former, given that this gender difference was the only one observed in the context of a suicidal outcome, the observed difference suggests that different motivations may have been assigned for the selection of this method, in particular, to the different genders. One such motivation may be a concern about post mortem appearance and the impact that it may have on others, which, in light of these results, would have been a consideration attributed to and therefore recalled only of females. Suicide by gunshot leaves the victim in a state
that is more visually shocking and more upsetting to whomever makes the discovery, whereas suicide by carbon monoxide leaves the body intact. If this consideration was attributed to the females who used this method, it might have been an indication to these subjects of the female victim's sensitivity to and level of regard for others. A gender difference within this outcome based upon this rationale would be supported by the fact that in contrast to their suicidal counterparts, female gunshot victims were not remembered as more interpersonally sensitive, which should have been the case if this was an attribution based upon the suicide alone. Alternatively, if a general belief was, in fact, held by these subjects about high interpersonal sensitivity among female suicide victims, it may have been tempered by the violence of the gunshot method and the unsightly results that it would yield. If a higher degree of interpersonal sensitivity is a general belief regarding female suicides, one way to understand it is as an attribution related to subjects' views regarding internal versus external causes of suicide. This rating was the only significant elevation made exclusively regarding female actors, and it is of note that interpersonally sensitivity is not a diagnosable disorder. Subjects' recall on this scale, taken in combination with the absence of reports of common forms of psychological distress may indicate that instead of a psychiatric/diagnostic understanding of female suicide,
they saw negative life circumstances as being associated with female suicide. These subjects may have believed that interpersonal loss or dissatisfaction would be a strong predictor of female suicide, and thus attribute this to the female suicide victims. Thus, rather than an independent psychiatric state, these subjects may have inferred the presence of an interpersonal deficit or dissatisfaction in the female suicide victims. Studies of the relationship between interpersonal loss and suicide do, in fact, indicate that when compared to living controls, adolescent suicide completers have significantly higher rates of interpersonal loss within the six months prior to the suicide (Brent, Perper, Moritz, Baugher et al., 1993). If these subjects were aware of this observation, these results would be consistent with the hypothesis that their lay knowledge of this influenced their memories of the subjects' self-reports.

The final significant difference on interpersonal sensitivity ratings, which was observed within an interaction of outcome and actor gender, was unpredicted. The male death by auto accident victims were remembered as significantly more interpersonally sensitive than males who died by carbon monoxide poisoning. One explanation for this may be the image that this sort of death created in the minds of the subjects. They may have seen a male who died in this way as having been agitated by interpersonal conflict and having acted out recklessly. Males are often portrayed in popular
culture as speeding off in their cars after engaging in an intense conflict with a girlfriend or with family members. Another plausible explanation is that males who died in an automobile accident may have been viewed as inept generally. For males in American culture, driving skills and possession of a vehicle are symbols of maturity and masculinity; social accoutrement. If the male accident victims were assumed to be the drivers in this scenario, they may have been perceived and remembered not only as inept drivers, but also as socially inept.

A significant main effect of outcome was observed on the somatization scale. Gunshot suicide victims of both genders were recalled by male and female subjects alike as having significantly more negative somatic experiences than actors for whom no outcome was presented and for whom an accidental death outcome was presented. The recall of elevated ratings on the somatization scale for male and female gunshot suicide victims may be indicative of a belief by the youthful subjects that suicide victims of both genders that use a highly lethal/violent method are characterized by a general weakness of constitution or absence of heartiness, which is concretely expressed in physical terms. Alternatively, they may have understood somatic concerns as expressions of other life stressors that could not be directly measured by the instruments in this study. Thus, symptoms such as headaches, rashes, and upset stomach may have been interpreted as
evidence of an individual who is failing to cope with external demands. A final explanation for the observed elevations on the somatization scale is the possibility that these subjects saw physical illness as a precipitant of suicide. Given the recent media attention to assisted suicide for people who are enduring debilitating, terminal, and painful illnesses, this may have been a consideration to these subjects. The absence of information concerning any type of physical illness in the description of the victim in the vignette, however, suggests that this explanation is not likely.

It is of note that with the exception of the elevated levels of interpersonal sensitivity recalled regarding the females who died by carbon monoxide poisoning, the significant differences observed for the suicide outcomes were for elevations of pathology in subjects who committed suicide by self-inflicted gunshot, whether male or female. As noted, there may be two reasons for the observed impact of the gunshot method. First, the violent nature of the act itself may connote a more maladaptive psychological state. Second, the near certainty of death with this method is suggestive of a higher level of intent to die. The elevation of recall of psychological distress in the suicide by gunshot condition was most frequently observed in subjects' recall of males, with the exception of the main effect of outcome observed for victims of both genders on the somatization
scale. Gunshot by suicide victims of both genders were remembered as having rated themselves significantly higher on this scale than were those in the accidental death and no outcome conditions. The remaining significant elevations observed for the male gunshot victims were on the global psychopathology and depression scales, both of which are indicative of emotional distress, suggesting that these subjects perceived violent male suicides as being associated with psychological distress more often than female suicides, independent of the method used. One potential explanation for this pattern is that women are more likely to seek help for negative affective states, whether in the form of professional counseling or comfort from significant others. As such, females may not be understood as responding to these forms of psychological distress with suicidal behavior. The latter may be believed to come about only when social supports are unavailable or when they fail, hence the observed elevations on items comprising the interpersonal sensitivity scale. In a different light, it possible that because of the nature of their socialization processes, women are more oriented toward relationships as a primary source of fulfillment, and interpersonal dissatisfaction may be seen as a motivator for suicide. This may reflect a more general belief that suicide by young females is commonly associated with interpersonal disappointment or alienation.

The results of this study suggest that the conditions
under which informant bias may be most substantial would be when a male victim is being remembered and a highly lethal method was used to commit suicide. This may have been because subjects believe that internal emotional distress is more likely to be associated with highly lethal male suicidal behavior than female suicidal behavior in general. This would be supported by the elevations in recall of female victims' distress being related to somatic and interpersonal concerns, if the former is understood as a manifestation of stress. One way of conceptualizing these results is that female suicide may have been seen by the subjects as a response to external factors rather than internal distress. Suicidal behavior in females may be understood as a response to negative circumstances that they perceive to be beyond their control. Consistent with this formulation were the findings of one investigation that examined the effects of the genders of suicide victims, genders of evaluators, and the age of evaluators upon attributions regarding the circumstances of suicide (Marks, 1989). Youthful evaluators rated female victims as having significantly more external frustrations than their male counterparts. Independent of their own age groups, subjects in this study assigned significantly higher ratings of unpleasant life events to females, supporting the suggestion that female suicides are believed to be more often externally motivated than male suicides.
The variations in the findings for male versus female actors in the present investigation may have been a function of the context or background information provided in the life history vignettes. The vignettes were identical with the exception of the actors' gender. It is plausible that given the differences in people's perceptions of males and females in general, the life circumstances in the vignettes may have taken on different meanings for the two genders. For example, part of the actors' recent history was the loss of a romantic partner. This interpersonal event, although presented in a way that did not connote extreme distress, may have been more salient in the context of a suicide to the subjects who were remembering female actors, hence the elevated interpersonal sensitivity ratings for females in this condition.

Taken together, the significant differences in subjects' recall of the actors' levels of psychological distress indicate that their memories were biased by the information provided to them about the suicide victims, including the fact of the suicide itself, the method by which it was carried out, and their genders. As anticipated, subjects appear to have used the details given them to draw upon an existing belief set regarding the psychological experience of a suicide victim, and in one case an accident victim. Thus, in spite of having recall as a goal, these subjects appear to have embellished or rewritten their memories with the
predicted biases regarding the relationships between mental health, life circumstances, and suicide. Moreover, the observed patterns of recall were consistent with much of what has been published regarding common lay theories of the causes and antecedents of suicide.

**Hindsight Bias**

The results of this study failed to support the hypothesis which predicted that subjects who had knowledge of a suicidal outcome (aware subjects) would retrospectively rate the suicide as having been significantly more likely than would the naive subjects, although a trend in this direction did emerge. These findings are inconsistent with those reported by Goggin and Range (1985) and with the hindsight bias predicted by this well researched paradigm. There are a number of plausible explanations for the absence of this predicted finding. One may be the relatively "normal" presentation of the actors in the vignettes of this study, as compared to the actor in the study conducted by Goggin and Range (1985). The suicide victim in their vignette had experienced myriad extreme life traumas, which in retrospect, provided their subjects with ample data upon which to base an inflated retrospective likelihood rating. This information may have functioned as a mediating factor, such that in their study the valence, imbalance, and detail of the contextual information contained in the vignette may
have elicited or magnified the hindsight effect.

The absence of a significant effect of outcome knowledge upon the hindsight ratings generated in the present study might also be explained by the sense of shock or surprise that the subjects may have experienced, particularly given the essentially unremarkable details of the actor's life circumstances provided in the vignette. The hindsight effect originally obtained by Fischoff and his colleagues has been replicated in a range of contexts. However, it has not been elicited in all studies of this kind. In some instances significant hindsight effects have been observed in the opposite direction from what is typically predicted; low retrospective likelihood ratings have been produced by subjects who were knowledgeable of the outcome. Mazursky and Ofir (1990) posited that in some circumstances, judgments may be attenuated by a "never saw it coming" effect, which is observed when a subject is surprised by an outcome event and retrospectively assigns a low likelihood rating to it. Anecdotal evidence indicating that this may have been the reaction of some of the subjects in the present study was provided in the protocol of one female subject who participated in the female actor/suicide by carbon monoxide condition. Without prompting, this subject added a note after her low hindsight rating stating with regard to the actor, "she seemed perfectly normal to me." It appears that depending upon the types of situations and outcomes provided
to subjects, and individual differences amongst the subjects themselves, hindsight bias may, in fact, be a two-tailed phenomenon. It is possible that some of the participants in this study who were made aware of the suicide may have responded in the "knew it all along" mode, and others in the "never saw it coming mode," creating a statistical washout and resulting in the absence of the predicted effect.

It has been suggested that some subjects may be more susceptible to conventional hindsight bias than others. Individual differences such as familiarity with the topic presented may predispose subjects to respond with high or low retrospective likelihood ratings. In a meta-analytic review of the considerable body of hindsight bias research Christensen-Szalanski and Willham (1991) determined that hindsight bias does not consistently obtain and posited that a mediating variable may have to be present for this effect to emerge. The mediating variable may be a cognitive set or belief system regarding the phenomenon of interest (e.g., this is a common event; it is an event that defies prediction). The level of familiarity that the subject has (Christensen-Szalanski & Willham, 1991) or believes that he or she has with the subject matter presented is one potential mediating variable that may also influence the degree of confidence he or she has in his or her ability to accurately estimate the likelihood of the outcome. Familiarity or confidence in their ability to accurately estimate may have
been factors in the present study, as these subjects did not appear to be as prone to hindsight bias as have been those in the impressive number of studies that have reported significant effects of outcome knowledge. A final explanation for the absence of the predicted results would be random sampling error. Given the low base rate of suicide, sampling error may have occurred with respect to subjects' knowledge or first hand contact with a suicide victim, such that any who had previous contact with a suicide victim may have been overrepresented in some of the experimental conditions of the study. If, for instance, experienced subjects were disproportionately represented in the no outcome condition and because of being sensitized to suicide they assigned a higher probability rating to it, the effect of outcome knowledge upon inexperienced subjects who were in the suicide outcome condition would have been obscured.

A unpredicted main effect of informant gender emerged on the hindsight measure of the likelihood of a suicide occurring. Female subjects in this study retrospectively judged suicide as being a significantly more likely event than did male subjects, regardless of the outcome presented to them. Thus, with or without knowing that an actor has committed suicide, females seem to see this phenomenon as more probable in general than do men. One explanation for this is that psychological mindedness and attunement to the emotional lives of others is as a more traditionally female
attribute; one that is generally taught, valued, and reinforced in women (Gilligan, 1982). Thus, these youthful female raters' self-images may have been more susceptible to potential demand characteristics of the study that may have been engendered by the nature of the question regarding the suicidal potential of the actor. Female subjects may have perceived the experiment as one designed to elicit not only their retrospective judgment but also to assess their sensitivity to indirect or subtle signs of emotional distress. Alternatively, female subjects may have held gender specific beliefs about the life circumstances of the actor in the presented vignette (e.g., romantic disappointment) that led them to interpret them as high risk markers for suicide. Wellman and Wellman (1986) reported from their study of gender differences in attitudes toward suicide that their male college aged subjects were more likely to deny the seriousness of an expression of suicidal ideation in a peer and less likely to believe that victims of suicide evidence psychiatric symptomatology prior to ending their lives. Moreover, females in their study were more aware of the increased incidence of adolescent suicide. This awareness may create a tendency for females to see suicide as a more likely event than males. If these gender specific attitudes and levels of familiarity were true of the subjects in this study they may explain the observed gender difference in retrospective likelihood ratings.
**Hindsight Status: Predicting Biased Recall on the Basis of Retrospective Likelihood Ratings**

The hypothesis that predicted that extreme hindsight ratings would be associated with corresponding patterns in subjects' recall of psychological distress in the suicide victims was supported by the findings of this study. A significant main effect of hindsight status was observed in the predicted direction on subjects' recall of victims' self-reported ratings of global psychological distress, somatization, hostility, phobic anxiety, and psychoticism. An interaction between hindsight status and informant gender was observed on the recall of victims' of global psychological distress. The elevated ratings of global distress are consistent with reports of commonly held attitudes and beliefs about suicide. Elevated recall of global distress was more pronounced in high hindsight status males than females, but was not confined to them. This view is consistent with the general population surveys of lay people cited earlier in this discussion, which showed that the majority of those surveyed believe that suicide victims are, in general terms, psychologically disturbed or abnormal. Adding emphasis to this mental illness schema, and indicating that this was the theory held by this subset of subjects, were the elevated ratings of psychoticism, one of the most severe and uncommon forms of psychopathology. The low incidence of this disorder adds weight to the assertion of
the hypothesis, which in simple terms, predicted that extreme hindsight ratings should predict extreme beliefs and response styles, and that recall would be impacted accordingly. The elicitation of this effect may be an indication that high hindsight status subjects hold more pronounced and well articulated schemas regarding the psychopathological nature of suicide victims than low hindsight status subjects. While normal people can be expected to experience a certain amount of psychological distress in some of the other psychological domains sampled, such as anxiety or depressed mood, symptoms on the psychoticism scale are associated with more severe and unquestionable psychopathology. Thus, high hindsight raters may tend to recall more severe forms psychopathology in suicide victims. The significantly elevated hostility ratings indicate that subjects who perceive a high likelihood of suicide may interpret the event as an act of anger or acting out. The magnified recall of phobic anxiety ratings suggests that this subset of informants believes that suicide victims experience the world as highly threatening and ominous.

The differences in the recall of the high and low hindsight status subjects suggest that it may be possible to screen and sort psychological autopsy informants along predictive criteria and ultimately to assess their relative credibility. The observed reporting style of the subset of subjects who made high retrospective likelihood ratings taken
together with the finding in this study that higher hindsight ratings are more often produced by females, indicates that it can be tentatively concluded that higher retrospective recall of psychological distress may be more frequently observed in females. However, male respondents are subject to these biases as well. The interaction of hindsight status with gender revealing that the most extreme recall of global ratings is attributable to males suggests that with regard to overall distress, these informants may have some of the most extreme schemas about suicide within this subset of raters and therefore a similar tendency to give elevated reports. Male conceptualizations may tend to lie at the extremes, such that they either minimize the importance of psychological distress in suicide victims, as has been reported in some studies, or to make rather definite and robust assumptions about the psychological instability of people who commit suicide.

Methodological Considerations

Before discussing the applied implications of the findings of this study some of the strengths and limitations of the design should be mentioned. One threat to the internal validity of this study is the absence of a manipulation check, which would have entailed asking subjects to record or endorse the outcome to which they were exposed. This would have provided an assurance that the outcomes were
known to the subjects prior to their ratings of the actors in the vignettes. Without this, it is unclear that the intended manipulation actually occurred with all of the subjects, and if it did not the absence of a hindsight effect observed in this study would be expected. A second debriefing question would also have enhanced the internal validity of this study. Specifically, it would have been informative to ascertain whether or not the subjects in the study had ever known anyone who committed suicide. As has been noted earlier in this discussion, people who have had such contacts may hold different beliefs regarding suicide victims than do those who have not had similar exposure. Previous first hand experience with a suicide victim is likely to have prompted a self-initiated inquiry of the topic, or at minimum, to have elicited some thought to the reasons for a suicide in an effort to understand the event. Subjects who have engaged in any degree of informal theorizing and dealt with the emotions that attend a suicide are more apt to have well articulated beliefs about the characteristics of suicide victims.

The type of data derived from this study is comparable but not identical to that generated in actual psychological autopsies. In this study, subjects were asked to rate the frequencies of the psychological symptoms, whereas in the psychological autopsy, as in other diagnostic systems, presence versus absence of a symptom is usually ascertained. During the course of the psychological autopsy, it is up to
the individual interviewer or clinician to ascertain the significance of each endorsed symptom and to apply his or her judgement including it in the diagnostic formulation. One of the ways in which an interviewer might probe such clinical significance is by attempting to gauge the frequency and severity of positively endorsed symptoms. However, such detailed probing is not uniformly done. Future studies should be designed to test response patterns using dichotomous (true/false; present/absent) test items in order to assess the degree of inference present when subjects cannot in effect, hedge their bets, by making positive endorsements at low frequencies, as they were able to do in this experiment.

One limitation to the generalizability of the present study is that, unlike the informants in a psychological autopsy, the experimental subjects had no direct contact, familiarity, relationship, or emotional ties to the victims profiled in the vignettes. This psychological and emotional distance from the victim might temper the biases that would emerge in the emotionally charged context of surviving a close friend or relative who has committed suicide, and the present study did not incorporate this familiarity factor. Experimental subjects would not be expected to have the same motives or derive the same degree of satisfaction from acting as informants as would actual psychological autopsy informants who are struggling to understand the suicide of a
loved one or to give meaning to the loss by participating in a study.

The lack of familiarity of the subjects with the actors may explain why only partial support for the main hypothesis was elicited. Fiske and Cox (1979) noted that in some instances less inference is used to describe less familiar targets; however, much of the research reviewed herein indicates that although the effect of inference may be smaller with unfamiliar targets, it is nevertheless, often significant. The present study may, however, represent a case in which both an unfamiliar actor, and perhaps a relatively unfamiliar event were presented to these youthful participants for which some had no minimal schemas or belief sets to bias their recall.

Another factor that may have dampened the impact of the experimental manipulations in this study and one that represents a limitation to its external validity is the difference from an actual psychological autopsy in the length of delay between the acquisition of the information about the victims and being asked to recall it. Inference effects vary directly with the length of delay between the study phase and test of subjects' accuracy of recall (Cohen, 1981; Dooling & Christiaansen, 1977). The longer the delay between study and test, the more error that is typically found. An additional difference was the subjects intent at the time of learning. Psychological autopsy informants have made their observations
in an incidental way, that is, without the intention of having to remember them at a later time. In contrast, the subjects in the present study made their observations with the goal of accurately recalling them. Moreover, the difference in the conditions under which experimental subjects and actual psychological autopsy informants acquire their knowledge is psychologically quite different, and there is some suggestion that actual contact with the target person to be remembered can be a disadvantage for remembering the target. One hypothesis that has been suggested to explain this is that personal investment in an interaction can divert a person’s attention and reduce memory processing capacity (Fiske & Taylor, 1991).

Also limiting the generalizability of this study is the fact that actual psychological autopsy informants are typically struggling with at least some degree of grief. Moreover, the unique features of the grieving process for survivors of suicide and the exceptional nature of their bereavement experience pose additional sources of bias in psychological autopsy informants. Superimposed upon the loss of a significant other is the stigma associated with this type of death; the potential to feel a sense of personal responsibility for not having somehow prevented it, the perception (real or imagined) of blame by others, and the discomfort that members of their natural social support systems may have with the nature of the death, which may, in
turn, limit their abilities to comfort and console the survivors. In addition, it is unclear whether venting feelings or merely talking about the suicidal event with others may impact the independent recollections of each individual informant as he/she in effect thinks aloud about the deceased. The presence of some or all of these factors would suggest that suicide survivors may present with agendas of their own, although these may not be fully articulated in consciousness. The extent to which they may consciously or otherwise wish to vindicate themselves poses a motivational source of bias which would not be expected to be present in experimental subjects.

A strength of the present study is that it was designed to minimize demand characteristics by inquiring about a balanced pool of positive and negative thoughts, feelings, and behaviors. An imbalanced inquiry can pose a compromise to the internal validity of the psychological autopsy study in that it may elicit artifactual results. By exhaustively covering all possible psychiatric symptoms in an instrument such as the K-SADS, the informant may develop a response set with the implicit assumption that it is not a question of whether symptoms were present but instead a notion that symptomatology is a given. The question then could hypothetically be perceived as simply being which symptoms were present, rather than whether the victim was symptomatic at all.
Applied Implications and Future Directions

The results of this study lend tentative support to the hypothesis that informant recall of psychological distress in suicide victims is subject to the influence of outcome information. Partial support for the hypothesized variation in the impact of outcome knowledge as a function of the gender of the suicide victim was also demonstrated, as this variable interacted with outcome knowledge in several instances. The subjects in this study were instructed to recall what they had observed in the study phase of the experiment. Given the differential patterns of responding that were observed, it seems clear that despite the instructions, subjects were using preexisting beliefs to reconstruct the information.

Further refinement of methods designed to detect response styles and ultimately to minimize distortion would represent a significant methodological refinement in the study of this elusive population. The simple detection of differences in response style between high and low hindsight status subjects represents an initial step toward this end and evidence that some informants may be more credible than others.

It should be noted that this study assessed differences between what was recalled by the subjects in their respective groups rather than differences from what was actually observed by them in the study phase. Thus a response style
has been demonstrated, yet without a measure of whether this enhances or diminishes accuracy. Future research should be designed to assess the degree of accuracy in subjects' reports. Another limitation of this study is to the practical applicability and import of the findings. Although statistically significant, the observed differences were not robust. The question arises as to whether these differences would, in practice, result in different final diagnoses. More compelling support for these hypotheses tested and tentatively supported by this work may come from studies that employ larger samples.

Although several features of this study limit its generalizability to actual psychological autopsy informants, many of these differences suggest that these results should be viewed as underestimates of the bias that would be present in the reports of survivors of suicide and that a higher degree of inference based bias would operate in these informants. These factors include the length of delay between acquisition and retrieval of the information, the level of familiarity of the subjects with the victims and with the phenomenon of suicide, the degree of emotional neutrality versus involvement of the informants, the intentions or goals during information acquisition, and the absence of exposure to subsequent information regarding the phenomenon of suicide. The status of actual psychological autopsy informants with respect to all of the above would be
expected to magnify response styles in the direction of increased ratings of psychological distress.

As in most scientific research, the questions designed to be of interest in the psychological autopsy emerge from a foundation of theoretical assumptions. It has been demonstrated that several psychiatric disorders are associated with an increased risk of suicide, most notably unipolar and bipolar depression (Brent, Perper, Moritz, Allman et al., 1993; Rich, Fowler, Fogarty, & Young, 1987; Slater & Depue, 1981). A diagnosis of either is believed likely to have existed in cases of completed suicide (Shaffer, 1988) and some have gone so far as to state that "virtually all" suicide completers suffer from a psychiatric disorder (Rich, Fowler, Fogarty, & Young, 1987). Therefore, the act of suicide is assumed by a significant proportion of mental health professionals to be de facto evidence of the victim's psychopathologic state, and the majority of the psychological autopsies published proceed from this perspective as they focus attention on assessing the presence and type of psychiatric diagnosis in the victim per standardized diagnostic systems such as DSM-III-R (American Psychiatric Association, 1987). Thus, although they vary with regard to the scale and scope of their investigation (i.e., they may also collect other types of information including life events), most contemporary psychological autopsies have the psychiatric status of the victim as a
major focus of their inquiry. It should be noted, and appreciated that although many sufferers of mood disorders are suicidal, not all suicidal people suffer from psychiatric disorders (Domino, 1990).

As has been noted, discrepant reports from individual informants are usually put to the test of consensus. A certain degree of judgement is exercised by the investigators as well, as greater weight may be given to some informants than others as in the case of adolescent substance abuse or suicidal ideation. This is an imprecise approach that is vulnerable to the intrusion of the biases of the investigators themselves. In addition, the informant collective is nonorthogonal and it is plausible that conclusions drawn from cross validation of informant reports would contain the same biases as the information generated by each individual informant. This is because of the likely circumstance of the survivors having discussed as a group the actions or mood states of the victim as they have collectively processed their grief and struggled to make sense of the event. If this has taken place the recollections of the individual informants are liable to have been colored by those of the others, such that the information rendered by him or her may represent an integration of the impressions generated by some or all of those who were close to the victim. If such a process does occur among informants, the use of consensus as a measure of
validity is spurious.

The potential impact of discussions about the victims among informants can be likened to an effect that has been labeled the "misinformation effect." It has been demonstrated that incorrect recall can be induced by the presentation of misinformation (i.e., details that were not actually present in the stimulus materials) subsequent to initial exposure to study materials (Loftus, Donders, Hoffman, & Schooler, 1989; Loftus & Hoffman, 1989; Schooler, Gerhard, & Loftus, 1986). After viewing a film or reading a passage of text, subjects who are told that something which was not presented in the stimulus materials was there are likely to report having seen it. The present work allowed only for the study of the potential influence of internal schemas or stereotypes, as opposed to later amendments to memory as a result of additional input. Future studies might be designed in which subjects act as both independent and dependent raters. This could be accomplished by having some subjects discuss the "cases" in groups and then be tested for their memories of the victim while others would reconstruct the ratings independently as was done in the present study.

The results of this study provide tentative support for the suggestion that informal subjective beliefs may color the memories of people who participate as informants in psychological autopsy research of completed suicide. The differences in recall of high and low retrospective
likelihood raters indicate that efforts to identify credible informants hold promise and warrant further research aimed at replication and refinement.
APPENDIX A
INSTRUCTIONS TO SUBJECTS
The experiment that you are participating in today consists of four parts, A through D. Please do not begin any part of the experiment until you are told to do so. (Packets were distributed at this time).

These packets contain information regarding the thoughts, feelings, behaviors, and life history of an individual who participated in another research study. This information is provided to you in two parts. Please read it carefully because at the end of the study, you will be asked to answer some questions about the person that you will have learned about.

Part A is a rating scale completed by the person that we are studying regarding his or her thoughts, behaviors, and feelings. Please read it carefully, and turn it over when you have finished. You may begin part A now. (Ten minutes were allowed for part A and the checklists were collected from all subjects).

Part B is a narrative life history of our subject. Again please read it carefully and turn it over when you have finished. You may begin part B now. (Five minutes were allowed for part B and the vignettes were collected from all subjects).

Part C provides you with additional information regarding our subject. Please read this information and complete the questions that follow. (Five minutes were allowed for part C and materials were collected from the subjects).

Part D is a blank form of the rating scale that you read in the first part of the study, designed for people to report the thoughts, feelings and behaviors of another person. Given what know from reading the subject's own self-report at the beginning of the experiment, please rate the how frequently our subject experienced the thoughts, feelings, and behaviors listed in the rating scale. Again, you are to make these ratings regarding the subject of our study, not regarding yourself. Please complete the entire checklist without leaving any blanks. (Twenty minutes were allowed for part D and the materials were collected).

*Note: Subjects who completed the rating scale in the first*
half of the test phase were given instructions described for parts C and D in reverse order. In all conditions the outcome statement was provided prior to subjects' completing any rating scales. Thus, outcome was always given as the first section of part C.
APPENDIX B
EXPERIMENTAL MATERIALS
APPENDIX B
EXPERIMENTAL MATERIALS

THE LIFE HISTORY VIGNETTE: BOB

Bob was born in Boston where he lived until the age of four when his family moved to the Chicago area. He is the third child of five, with one older brother, Philip, one older sister Susan, and two younger sisters, Katie and Melissa. Bob's mother Jean was a homemaker until about four years ago when she started working as an interior decorator. Bob's father, Ross, is a corporate executive.

When he was in grammar school Bob played on the soccer team. He describes himself as someone who doesn't like to lose and who is pretty competitive when it comes to sports. In other areas he said that he is "pretty laid back" and does not really compare himself to other people. He added that his brother and sisters might disagree with this because they tell him he tends to show off at home. This is sometimes the source of arguments, especially between Bob and Philip. Bob also reported that he and Philip are not as close as they were when they were younger but that they love each other a lot.

Bob never had many disagreements with his parents until he was in high school. When he was in grade school he sometimes got reprimanded for being sloppy around the house and for having to be reminded to do his chores. He usually tried to get one of his sisters to do them for him, sometimes by threatening to tell their parents about something that they had done. Once in eighth grade Bob got grounded for a month for cutting school and smoking cigarettes.

During his first two years of high school Bob was on the tennis team and hung around with a crowd of people that he had known since grade school. During his junior year he quit the tennis team because it was clear that he was not going to make the varsity team. At this time he made some new friends that had different interests. He started listening to heavy metal music and had one of his ears pierced in two places. This caused a big argument between Bob and his father who felt that Bob was "going overboard." Bob's father also complained that he did not like his new friends and thought that they seemed wild and irresponsible. Bob resented this because he had been keeping his grades up and felt that he should be able to do as he pleased as long as he was keeping up with his schoolwork. Bob was also experimenting with drinking and smoking pot, but his parents never became aware of this.

Bob got his first job during his sophomore year in high school working at a grocery store. He really enjoyed having money of his own to spend and felt that it gave him a lot
more freedom and independence. Although he planned to save most of the money for college, he wound up spending much of it on going out and on records and clothes. Bob kept his job through high school and still works there today.

Bob is now a nineteen year old college freshman and has yet to decide upon a major. While he was an above average student in high school he has dropped off in college and now is an only an average student. He has been concerned about this change. Bob has changed a lot since starting college and his life is not as simple as it used to be.

Bob is a commuter student and still lives at home with his family, but does not see them as much as he used to. Bob rarely makes it home for dinner with his family like he used to. When he does see his family they sometimes have conflicts over various issues. When he is home he spends most of his time in his bedroom where he often studies or just relaxes listening to music. During exam time Bob often stays up very late studying. Sometimes, especially during exams, he stays home to catch up on schoolwork. Sometimes he stays home just to catch up on sleep. He often sleeps until noon on the weekends, especially if he has a hangover.

On the weekends Bob spends most of his time with his new crowd of college friends. He occasionally sees high school friends but he feels has less in common with them than he used to. Yet Bob has good memories of good times with these friends; sneaking beer together, staying out after curfew, and playing pranks in their neighborhood or in school. With his new friends Bob goes to parties and bars on the weekend. He and his girlfriend of fourteen months recently broke up so Bob does not currently have a steady girlfriend. Bob still feels bad about the break-up and sorry for some of the things that he said and did when they argued. He sometimes feels lonely because he does not have a steady girlfriend.

Bob works extra hours because he likes to spend money. He is especially generous with his friends and gave his ex-girlfriend an expensive bracelet last Christmas. He is also saving money to buy a car. This is one of the things that he and his parents fight about because Bob is expected to contribute to paying for his college education.

Bob does not know what his long range plans are. He has not decided on a major but knows that he is not the type to don a corporate uniform and join "the rat race." He is thinking about getting a degree that would prepare him to be his own boss, maybe in some type of small business. On the other hand, he thinks that this could be pretty stressful. Sometimes he has fantasies of quitting school, buying a convertible, and just travelling out west for a year or so.
Liz was born in Boston where she lived until the age of four when her family moved to the Chicago area. She is the third child of five, with one older brother, Philip, one older sister Susan, and two younger sisters, Katie and Melissa. Liz's mother Jean was a homemaker until about four years ago when she started working as an interior decorator. Liz's father, Ross, is a corporate executive.

When she was in grammar school Liz played on the soccer team. She describes herself as someone who doesn't like to lose and who is pretty competitive when it comes to sports. In other areas she said that she is "pretty laid back" and does not really compare herself to other people. She added that her brother and sisters might disagree with this because they tell her she tends to show off at home. This is sometimes the source of arguments, especially between Liz and Susan. Liz also reported that she and Susan are not as close as they were when they were younger but that they love each other a lot.

Liz never had many disagreements with her parents until she was in high school. When she was in grade school she sometimes got reprimanded for being sloppy around the house and for having to be reminded to do her chores. She usually tried to get one of her sisters to do them for her, sometimes by threatening to tell their parents about something that they had done. Once in eighth grade Liz got grounded for a month for cutting school and smoking cigarettes.

During her first two years of high school Liz was on the tennis team and hung around with a crowd of people that she had known since grade school. During her junior year she quit the tennis team because it was clear that she was not going to make the varsity team. At this time she made some new friends that had different interests. She started listening to heavy metal music and had one of her ears pierced in two places. This caused a big argument between Liz and her father who felt that Liz was "going overboard." Liz's father also complained that he did not like her new friends and thought that they seemed wild and irresponsible. Liz resented this because she had been keeping her grades up and felt that she should be able to do as she pleased as long as she was keeping up with her schoolwork. Liz was also experimenting with drinking and smoking pot, but her parents never became aware of this.

Liz got her first job during her sophomore year in high school working at a grocery store. She really enjoyed having money of her own to spend and felt that it gave her a lot more freedom and independence. Although she planned to save most of the money for college, she wound up spending much of it on going out and on records and clothes. Liz kept her job
through high school and still works there today.

Liz is now a nineteen year old college freshman and has yet to decide upon a major. While she was an above average student in high school she has dropped off in college and now is an only an average student. She has been concerned about the change. Liz has changed a lot since starting college and her life is not as simple as it used to be.

Liz is a commuter student and still lives at home with her family, but does not see them as much as she used to. Liz rarely makes it home for dinner with her family like she used to. When she does see her family they sometimes have conflicts over various issues. When she is home she spends most of her time in her bedroom where she often studies or just relaxes listening to music. During exam time Liz often stays up very late studying. Sometimes, especially during exams, she stays home to catch up on schoolwork. Sometimes she stays home just to catch up on sleep. She often sleeps until noon on the weekends, especially if she has a hangover.

On the weekends Liz spends most of her time with her new crowd of college friends. She occasionally sees high school friends but she feels has less in common with them than she used to. Yet Liz has good memories of good times with these friends; sneaking beer together, staying out after curfew, and playing pranks in their neighborhood or in school. With her new friends Liz goes to parties and bars on the weekend. She and her boyfriend of fourteen months recently broke up so Liz does not currently have a steady boyfriend. Liz still feels bad about the break-up and sorry for some of the things that she said and did when they argued. She sometimes feels lonely because she does not have a steady boyfriend.

Liz often works extra hours because she likes to spend money. She is especially generous with her friends and gave her ex-boyfriend an expensive bracelet last Christmas. She is also saving money to buy a car. This is one of the things that she and her parents fight about because Liz is expected to contribute to paying for her college education.

Liz does not know what her long range plans are. She has not decided on a major but knows that she is not the type to don a corporate uniform and join "the rat race." She is thinking about getting a degree that would prepare her to be her own boss, maybe in some type of small business. On the other hand, she thinks that this could be pretty stressful. Sometimes she has fantasies of quitting school, buying a convertible, and just travelling out west for a year or so.
THE THOUGHTS, FEELINGS, AND BEHAVIORS CHECKLIST:
DUMMY ITEMS

1. Feeling healthy
2. Skin rashes
3. Feeling carefree
4. Strong need to have personal possessions well organized
5. Feeling that members of the opposite sex find you attractive
6. Feeling that others find you odd
7. Easily bring tasks to a satisfying conclusion
8. Feeling that you have done something wrong
9. Feeling that you will be successful
10. Feeling that you will be criticized for something
11. Have a lot of patience
12. Wanting to punish people or see them punished
13. Able to walk into a dark room without fear
14. Fear of driving in heavy traffic
15. Feeling that others would like to see you succeed
16. Feeling that others are trying to pry into your personal business
17. Feeling that you are much like the average person
18. Feeling that you have lost all sensation in your body
One purpose of this study is to investigate people's ability to predict the likelihood of a person experiencing a variety of life events. Therefore, we would like for you to use the information regarding his life history and his thoughts, feelings, and behaviors to rate the likelihood of Bob having the experiences listed below.

Please indicate your likelihood estimate of Bob having these experiences in percentage points. Your estimates will fall somewhere within the range of 0% to 100%, with 0% indicating no chance of him having the experience and 100% indicating the absolute certainty of him having the experience.

1) There is a(n) ____% chance of Bob getting married.

2) There is a(n) ____% chance of Bob being arrested for something.

3) There is a(n) ____% chance of Bob being killed in an accident.

4) There is a(n) ____% chance of Bob finishing college.

5) There is a(n) ____% chance of Bob committing suicide.

6) There is a(n) ____% chance of Bob getting divorced.
Another purpose of this study is to investigate ways of studying the reported experiences of others. We are interested in people’s ability to recall another person’s first-hand report of his or her own experiences. Therefore, we would like for you to make your best recollections of Bob’s own report of his thoughts, feelings, and behaviors, which you read at the beginning of the study.

Please rate each item on the scale of 1-7 provided. For any items that you do not recall specifically, give your best estimate.

Please begin on the following page now.

Note: This cover sheet was followed by the thoughts, feelings, and behaviors checklist described in Chapter II.
We have selected this case from our files because subsequent to us collecting Bob’s life history information he was killed in an automobile accident. One purpose of this study is to investigate people’s ability to predict a person’s accidental death, given information about that person’s life. Therefore, we would like for you to disregard your knowledge of Bob’s accidental death and use only the information regarding his life history and his thoughts, feelings, and behaviors to rate the likelihood of Bob’s accidental death.

Please indicate your likelihood estimate of Bob’s accidental death in percentage points. Your estimate will fall somewhere within the range of 0% to 100%, with 0% indicating no chance of him dying and 100% indicating the absolute certainty of him dying.

There was a(n) ____% chance of Bob dying an accidental death.
Another purpose of this study is to investigate ways of studying the reported experiences of people who are no longer living. We are interested in people's ability to recall the person's first-hand report of his or her own experiences. Therefore, we would like for you to make your best recollections of Bob's own report of his thoughts, feelings, and behaviors, which you read at the beginning of the study.

Please rate each item on the scale of 1-7 provided. For any items that you do not recall specifically, give your best estimate.

Please begin on the following page now.

Note: This cover sheet was followed by the thoughts, feelings, and behaviors checklist described in Chapter II.
We have selected this case from our files because subsequent to us collecting Bob's life history information he committed suicide by shooting himself. One purpose of this study is to investigate people's ability to predict a person's suicide, given information about that person's life. Therefore, we would like for you to disregard your knowledge of Bob's suicide and use only the information regarding his life history and his thoughts, feelings, and behaviors to rate the likelihood of Bob's suicide.

Please indicate your likelihood estimate of Bob committing suicide in percentage points. Your estimate will fall somewhere within the range of 0% to 100%, with 0% indicating no chance of him committing suicide and 100% indicating the absolute certainty of his suicide occurring.

There was a(n) _____% chance of Bob committing suicide.
Another purpose of this study is to investigate ways of studying the reported experiences of people who are no longer living. We are interested in people's ability to recall the person's first-hand report of his or her own experiences. Therefore, we would like for you to make your best recollections of Bob's own report of his thoughts, feelings, and behaviors, which you read at the beginning of the study.

Please rate each item on the scale of 1-7 provided. For any items that you do not recall specifically, give your best estimate.

Please begin on the following page now.

Note: This cover sheet was followed by the thoughts, feelings, and behaviors checklist described in Chapter II.
We have selected this case from our files because subsequent to us collecting Bob's life history information he committed suicide by carbon monoxide poisoning. One purpose of this study is to investigate people's ability to predict a person's suicide, given information about that person's life. Therefore, we would like for you to disregard your knowledge of Bob's suicide and use only the information regarding his life history and his thoughts, feelings, and behaviors to rate the likelihood of Bob's suicide.

Please indicate your likelihood estimate of Bob committing suicide in percentage points. Your estimate will fall somewhere within the range of 0% to 100%, with 0% indicating no chance of him committing suicide and 100% indicating the absolute certainty of his suicide occurring.

There was a(n) ____% chance of Bob committing suicide.
Another purpose of this study is to investigate ways of studying the reported experiences of people who are no longer living. We are interested in people's ability to recall the person's first-hand report of his or her own experiences. Therefore, we would like for you to make your best recollections of Bob's own report of his thoughts, feelings, and behaviors, which you read at the beginning of the study.

Please rate each item on the scale of 1-7 provided. For any items that you do not recall specifically, give your best estimate.

Please begin on the following page now.

Note: This cover sheet was followed by the thoughts, feelings, and behaviors checklist described in Chapter II.
One purpose of this study is to investigate people's ability to predict the likelihood of a person experiencing a variety of life events. Therefore, we would like for you to use the information regarding her life history and her thoughts, feelings, and behaviors to rate the likelihood of Liz having the experiences listed below.

Please indicate your likelihood estimate of Liz having these experiences in percentage points. Your estimates will fall somewhere within the range of 0% to 100%, with 0% indicating no chance of her having the experience and 100% indicating the absolute certainty of her having the experience.

1) There is a(n) ____% chance of Liz getting married.
2) There is a(n) ____% chance of Liz being arrested for something.
3) There is a(n) ____% chance of Liz being killed in an accident.
4) There is a(n) ____% chance of Liz finishing college.
5) There is a(n) ____% chance of Liz committing suicide.
6) There is a(n) ____% chance of Liz getting divorced.
Another purpose of this study is to investigate ways of studying the reported experiences of others. We are interested in people's ability to recall another person's first-hand report of his or her own experiences. Therefore, we would like for you to make your best recollections of Liz's own report of her thoughts, feelings, and behaviors, which you read at the beginning of the study.

Please rate each item on the scale of 1-7 provided. For any items that you do not recall specifically, give your best estimate.

Please begin on the following page now.

Note: This cover sheet was followed by the thoughts, feelings, and behaviors checklist described in Chapter II.
LIZ: AUTO ACCIDENT DEATH OUTCOME
PART C

We have selected this case from our files because subsequent to us collecting Liz's life history information she was killed in an automobile accident. One purpose of this study is to investigate people's ability to predict a person's accidental death, given information about that person's life. Therefore, we would like for you to disregard your knowledge of Liz's accidental death and use only the information regarding her life history and her thoughts, feelings, and behaviors to rate the likelihood of Liz's accidental death.

Please indicate your likelihood estimate of Liz's accidental death in percentage points. Your estimate will fall somewhere within the range of 0% to 100%, with 0% indicating no chance of her dying and 100% indicating the absolute certainty of her dying.

There was a(n) ____% chance of Liz dying an accidental death.
Another purpose of this study is to investigate ways of studying the reported experiences of people who are no longer living. We are interested in people's ability to recall the person's first-hand report of his or her own experiences. Therefore, we would like for you to make your best recollections of Liz's own report of her thoughts, feelings, and behaviors, which you read at the beginning of the study.

Please rate each item on the scale of 1-7 provided. For any items that you do not recall specifically, give your best estimate.

Please begin on the following page now.

Note: This cover sheet was followed by the thoughts, feelings, and behaviors checklist described in Chapter II.
We have selected this case from our files because subsequent to us collecting Liz’s life history information she committed suicide by shooting herself. One purpose of this study is to investigate people’s ability to predict a person’s suicide, given information about that person’s life. Therefore, we would like for you to disregard your knowledge of Liz’s suicide and use only the information regarding her life history and her thoughts, feelings, and behaviors to rate the likelihood of Liz’s suicide.

Please indicate your likelihood estimate of Liz committing suicide in percentage points. Your estimate will fall somewhere within the range of 0% to 100%, with 0% indicating no chance of her committing suicide and 100% indicating the absolute certainty of her suicide occurring.

There was a(n) ____% chance of Liz committing suicide.
Another purpose of this study is to investigate ways of studying the reported experiences of people who are no longer living. We are interested in people's ability to recall the person's first-hand report of his or her own experiences. Therefore, we would like for you to make your best recollections of Liz's own report of her thoughts, feelings, and behaviors, which you read at the beginning of the study.

Please rate each item on the scale of 1-7 provided. For any items that you do not recall specifically, give your best estimate.

Please begin on the following page now.

Note: This cover sheet was followed by the thoughts, feelings, and behaviors checklist described in Chapter II.
We have selected this case from our files because subsequent to us collecting Liz's life history information she committed suicide by carbon monoxide poisoning. One purpose of this study is to investigate people's ability to predict a person's suicide, given information about that person's life. Therefore, we would like for you to disregard your knowledge of Liz's suicide and use only the information regarding her life history and her thoughts, feelings, and behaviors to rate the likelihood of Liz's suicide.

Please indicate your likelihood estimate of Liz committing suicide in percentage points. Your estimate will fall somewhere within the range of 0% to 100%, with 0% indicating no chance of her committing suicide and 100% indicating the absolute certainty of her suicide occurring.

There was a(n) ___% chance of Liz committing suicide.
Another purpose of this study is to investigate ways of studying the reported experiences of people who are no longer living. We are interested people's ability to recall the person's first-hand report of his or her own experiences. Therefore, we would like for you to make your best recollections of Liz's own report of her thoughts, feelings, and behaviors, which you read at the beginning of the study. Please rate each item on the scale of 1-7 provided. For any items that you do not recall specifically, give your best estimate.

Please begin on the following page now.

Note: This cover sheet was followed by the thoughts, feelings, and behaviors checklist described in Chapter II.
One purpose of this study is to investigate ways of studying the reported experiences of others. We are interested in people's ability to recall another person's first-hand report of his or her own experiences. Therefore, we would like for you to make your best recollections of Bob's own report of his thoughts, feelings, and behaviors, which you read at the beginning of the study.

Please rate each item on the scale of 1-7 provided. For any items that you do not recall specifically, give your best estimate.

Please begin on the following page now.

Note: This cover sheet was followed by the thoughts, feelings, and behaviors checklist described in Chapter II.
Another purpose of this study is to investigate people's ability to predict the likelihood of a person experiencing a variety of life events. Therefore, we would like for you to use the information regarding his life history and his thoughts, feelings, and behaviors to rate the likelihood of Bob having the experiences listed below.

Please indicate your likelihood estimate of Bob having these experiences in percentage points. Your estimates will fall somewhere within the range of 0% to 100%, with 0% indicating no chance of him having the experience and 100% indicating the absolute certainty of him having the experience.

1) There is a(n) ___% chance of Bob getting married.
2) There is a(n) ___% chance of Bob being arrested for something.
3) There is a(n) ___% chance of Bob being killed in an accident.
4) There is a(n) ___% chance of Bob finishing college.
5) There is a(n) ___% chance of Bob committing suicide.
6) There is a(n) ___% chance of Bob getting divorced.
We have selected this case from our files because subsequent to us collecting Bob's life history information he died in automobile accident. One purpose of this study is to investigate ways of studying the reported experiences of people who are no longer living. We are interested people's ability to recall the person's first-hand report of his or her own experiences. Therefore, we would like for you to make your best recollections of Bob's own report of his thoughts, feelings, and behaviors, which you read at the beginning of the study.

Please rate each item on the scale of 1-7 provided. For any items that you do not recall specifically, give your best estimate.

Please begin on the following page now.

Note: This cover sheet was followed by the thoughts, feelings, and behaviors checklist described in Chapter II.
Another purpose of this study is to investigate people’s ability to predict a person’s accidental death, given information about that person’s life. Therefore, we would like for you to disregard your knowledge of Bob’s accidental death and use only the information regarding his life history and his thoughts, feelings, and behaviors to rate the likelihood of Bob’s accidental death.

Please indicate your likelihood estimate of Bob’s accidental death in percentage points. Your estimate will fall somewhere within the range of 0% to 100%, with 0% indicating no chance of him dying and 100% indicating the absolute certainty of him dying.

There was a(n) ____% chance of Bob dying an accidental death.
We have selected this case from our files because subsequent to us collecting Bob's life history information he committed suicide by shooting himself. One purpose of this study is to investigate ways of studying the reported experiences of people who are no longer living. We are interested people's ability to recall the person's first-hand report of his or her own experiences. Therefore, we would like for you to make your best recollections of Bob's own report of his thoughts, feelings, and behaviors, which you read at the beginning of the study.

Please rate each item on the scale of 1-7 provided. For any items that you do not recall specifically, give your best estimate.

Please begin on the following page now.

Note: This cover sheet was followed by the thoughts, feelings, and behaviors checklist described in Chapter II.
Another purpose of this study is to investigate people’s ability to predict a person’s suicide, given information about that person’s life. Therefore, we would like for you to disregard your knowledge of Bob’s suicide and use only the information regarding his life history and his thoughts, feelings, and behaviors to rate the likelihood of Bob’s suicide.

Please indicate your likelihood estimate of Bob committing suicide in percentage points. Your estimate will fall somewhere within the range of 0% to 100%, with 0% indicating no chance of him committing suicide and 100% indicating the absolute certainty of his suicide occurring.

There was a(n) ____% chance of Bob committing suicide.
We have selected this case from our files because subsequent to us collecting Bob’s life history information he committed suicide by carbon monoxide poisoning. One purpose of this study is to investigate ways of studying the reported experiences of people who are no longer living. We are interested people’s ability to recall the person’s first-hand report of his or her own experiences. Therefore, we would like for you to make your best recollections of Bob’s own report of his thoughts, feelings, and behaviors, which you read at the beginning of the study.

Please rate each item on the scale of 1-7 provided. For any items that you do not recall specifically, give your best estimate.

Please begin on the following page now.

Note: This cover sheet was followed by the thoughts, feelings, and behaviors checklist described in Chapter II.
Another purpose of this study is to investigate people's ability to predict a person's suicide, given information about that person's life. Therefore, we would like for you to disregard your knowledge of Bob's suicide and use only the information regarding his life history and his thoughts, feelings, and behaviors to rate the likelihood of Bob's suicide.

Please indicate your likelihood estimate of Bob committing suicide in percentage points. Your estimate will fall somewhere within the range of 0% to 100%, with 0% indicating no chance of him committing suicide and 100% indicating the absolute certainty of his suicide occurring.

There was a(n) ___% chance of Bob committing suicide.
One purpose of this study is to investigate ways of studying the reported experiences of others. We are interested in people’s ability to recall another person’s first-hand report of his or her own experiences. Therefore, we would like for you to make your best recollections of Liz’s own report of her thoughts, feelings, and behaviors, which you read at the beginning of the study.

Please rate each item on the scale of 1-7 provided. For any items that you do not recall specifically, give your best estimate.

Please begin on the following page now.

Note: This cover sheet was followed by the thoughts, feelings, and behaviors checklist described in Chapter II.
Another purpose of this study is to investigate people's ability to predict the likelihood of a person experiencing a variety of life events. Therefore, we would like for you to use the information regarding her life history and her thoughts, feelings, and behaviors to rate the likelihood of Liz having the experiences listed below.

Please indicate your likelihood estimate of Liz having these experiences in percentage points. Your estimates will fall somewhere within the range of 0% to 100%, with 0% indicating no chance of her having the experience and 100% indicating the absolute certainty of her having the experience.

1) There is a(n) ___% chance of Liz getting married.
2) There is a(n) ___% chance of Liz being arrested for something.
3) There is a(n) ___% chance of Liz being killed in an accident.
4) There is a(n) ___% chance of Liz finishing college.
5) There is a(n) ___% chance of Liz committing suicide.
6) There is a(n) ___% chance of Liz getting divorced.
We have selected this case from our files because subsequent to us collecting Liz's life history information she died in automobile accident. One purpose of this study is to investigate ways of studying the reported experiences of people who are no longer living. We are interested in people's ability to recall the person's first-hand report of his or her own experiences. Therefore, we would like for you to make your best recollections of Liz's own report of her thoughts, feelings, and behaviors, which you read at the beginning of the study.

Please rate each item on the scale of 1-7 provided. For any items that you do not recall specifically, give your best estimate.

Please begin on the following page now.

Note: This cover sheet was followed by the thoughts, feelings, and behaviors checklist described in Chapter II.
Another purpose of this study is to investigate people's ability to predict a person's accidental death, given information about that person's life. Therefore, we would like for you to disregard your knowledge of Liz's accidental death and use only the information regarding her life history and her thoughts, feelings, and behaviors to rate the likelihood of Liz's accidental death.

Please indicate your likelihood estimate of Liz's accidental death in percentage points. Your estimate will fall somewhere within the range of 0% to 100%, with 0% indicating no chance of her dying and 100% indicating the absolute certainty of her dying.

There was a(n) ___% chance of Liz dying an accidental death.
LIZ: GUNSHOT SUICIDE OUTCOME
PART C

We have selected this case from our files because subsequent to us collecting Liz's life history information she committed suicide by shooting herself. One purpose of this study is to investigate ways of studying the reported experiences of people who are no longer living. We are interested people's ability to recall the person's first-hand report of his or her own experiences. Therefore, we would like for you to make your best recollections of Liz's own report of her thoughts, feelings, and behaviors, which you read at the beginning of the study.

Please rate each item on the scale of 1-7 provided. For any items that you do not recall specifically, give your best estimate.

Please begin on the following page now.

Note: This cover sheet was followed by the thoughts, feelings, and behaviors checklist described in Chapter II.
Another purpose of this study is to investigate people's ability to predict a person's suicide, given information about that person's life. Therefore, we would like for you to disregard your knowledge of Liz's suicide and use only the information regarding her life history and her thoughts, feelings, and behaviors to rate the likelihood of Liz's suicide.

Please indicate your likelihood estimate of Liz committing suicide in percentage points. Your estimate will fall somewhere within the range of 0% to 100%, with 0% indicating no chance of her committing suicide and 100% indicating the absolute certainty of her suicide occurring.

There was a(n) __% chance of Liz committing suicide.
We have selected this case from our files because subsequent to us collecting Liz’s life history information she committed suicide by carbon monoxide poisoning. One purpose of this study is to investigate ways of studying the reported experiences of people who are no longer living. We are interested people’s ability to recall the person’s first-hand report of his or her own experiences. Therefore, we would like for you to make your best recollections of Liz’s own report of her thoughts, feelings, and behaviors, which you read at the beginning of the study.

Please rate each item on the scale of 1-7 provided. For any items that you do not recall specifically, give your best estimate.

Please begin on the following page now.

Note: This cover sheet was followed by the thoughts, feelings, and behaviors checklist described in Chapter II.
Another purpose of this study is to investigate people's ability to predict a person's suicide, given information about that person's life. Therefore, we would like for you to disregard your knowledge of Liz's suicide and use only the information regarding her life history and her thoughts, feelings, and behaviors to rate the likelihood of Liz's suicide.

Please indicate your likelihood estimate of Liz committing suicide in percentage points. Your estimate will fall somewhere within the range of 0% to 100%, with 0% indicating no chance of her committing suicide and 100% indicating the absolute certainty of her suicide occurring.

There was a(n) ____% chance of Liz committing suicide.
REFERENCES


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VITA

The author was born in Chicago, Illinois. She is the daughter of Arthur and Dorothy Telcser.

The author earned the Bachelor of Science degree, summa cum laude from Loyola University Chicago in May, 1989. She majored in applied psychology. The author was the 1989 recipient of the Ann Heilman Award for Academic Excellence and was inducted into Alpha Sigma Nu, also in 1989.

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The final copies have been examined by the director of the dissertation and the signature which appears below verifies the fact that any necessary changes have been incorporated and that the dissertation is now given final approval by the committee with reference to content and form.

The dissertation is, therefore, accepted in partial fulfillment of the requirements for the degree of Doctor of Philosophy.

3-22-96
Date

Director's Signature