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Cognitive Distortion as a Function of Social Anxiety in College Students

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COGNITIVE DISTORTION AS A FUNCTION OF
SOCIAL ANXIETY IN COLLEGE STUDENTS

by

Kelly A. Johnson

A Thesis Submitted to the Faculty of the Graduate School
of Loyola University of Chicago, in Partial Fulfillment
of the Requirements for the Degree of
Master of Arts

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VITA

The author, Kelly Ann Johnson, is the daughter of Justice Earl Johnson, Jr., and Ms. Karol Ann Greeson. She was born January 31, 1962, in Washington, D.C.

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INTRODUCTION

Social anxiety, defined as "anxiety resulting from the prospect or presence of interpersonal evaluation in real or imagined social settings" (Schlenker & Leary, 1982, p. 642), has been the focus of considerable investigation in psychological literature in recent years. Certainly, the phenomenon of social anxiety is worthy of such attention, as it is experienced by a great many people. In fact, Zimbardo's (1977) world-wide survey found that 80% of his sample was shy at some point in their lives, and 40% of these people considered themselves shy at present. Twenty-five percent of his sample called themselves chronically shy, and 4% reported feeling shy virtually all of the time and in all situations. Pilkonis, Feldman, Himmelhoch, and Cornes (1980) stated that 15%-20% of the general adult population exhibits distressing social anxiousness. Social anxiety has been characterized as more distressing, debilitating, and pervasive than other frequently studied analogue anxiety disorder populations. Further, it has been suggested that high degrees of social anxiety may actually be a risk factor for the

development of more serious psychopathology (Curran, 1977; Smith, Ingram, & Brehm, 1983).

Some confusion is found in the literature regarding the definition of social anxiety, particularly as it is sometimes used interchangeably with the term "shyness." Shyness can be viewed from two perspectives: (1) the affective or cognitive experience characterized by nervousness and apprehension in interpersonal situations (e.g., Leary & Schlenker, 1981; Zimbardo, 1977); and, (2) the behavioral component exhibited by reticence, inhibition, or social avoidance (Pilkonis, 1977). Hence, shyness includes both "feeling shy" and "acting shy" (Leary, 1986a). Social anxiety--whether in the form of speech anxiety, dating anxiety, or communication apprehension--refers to this former aspect of shyness, i.e., the subjective experience of the shy individual.

Subjective social anxiety and interpersonal reticence do not necessarily occur together, as one may feel nervous in a social encounter but not necessarily flee from it. Indeed, the correlation between the affective and the behavioral components of shyness is only a low to moderate one (Leary, 1983a). Thus, shyness can be conceptualized as a psychological syndrome consisting of the cognitive and affective experiences of social anxiety and the behavioral concomitants of social inhibition.

The present study concerns the first of these, i.e., social anxiety, as it addresses the cognitive and affective rather than the behavioral aspects of shyness.

What distinguishes social anxiety from other forms of anxiety? Anxiety is defined as "a cognitive and affective response characterized by apprehension about an impending, potentially negative outcome that one thinks one is unable to avert..., the impending threat real or imagined" (Schlenker & Leary, 1982, p. 642). It is the socially anxious individual's central concern about the potential or actual evaluative responses by others in social situations which differentiates social anxiety from nonsocial anxieties (Schlenker & Leary, 1982).

People who frequently and intensely experience social anxiety, those who may be said to possess the trait of social anxiety, differ in several ways from people who less frequently and less intensely experience social anxiety (i.e., those who may experience a state of social anxiety). For example, as compared to people low in social anxiety, highly socially anxious people tend to be more concerned with making favorable impressions on others and to assume they make unfavorable impressions on others no matter how they behave and no matter how brief or extended the interaction (Greenberg, Pzyzynski,

& Stine, 1985; Leary, 1983a, 1986b; Maddux, Norton, & Leary, in press; Leary, Kowalski, & Campbell, under review).

Individuals who conceptualize themselves as "socially anxious" (i.e., have developed a self-schema or self-construct revolving around the theme of chronic social anxiety) tend to experience social anxiety more frequently and intensely than others (distinctiveness), experience it across a wide variety of social situations (consistency), and maintain that other people see them as socially anxious (consensus) (Schlenker & Leary, 1982). It has been suggested that social anxiety should be viewed on a continuum rather than a dichotomous dimension (e.g., Fatis, 1983). However, a social anxiety factor consistently emerges in factor analytic studies of anxiety and fear inventories (e.g., Crozier, 1986; Endler, Hunt, & Rosenstein, 1962; Fenigstein, Scheier, & Buss, 1975; Strahan, 1974).

Several models of social anxiety have recently been generated which emphasize the role of cognitive processes in social anxiety (e.g., Beck & Emery, 1985; Buss, 1984; Carver & Scheier, 1986; Schlenker & Leary, 1982). Schlenker and Leary (Leary & Schlenker, 1981; Leary, 1983b; Schlenker, 1987; Schlenker & Leary, 1982) have proposed a self-presentational theory which states that

people experience social anxiety when they believe they will be unable to make a desired impression upon others. In part, the impressions one makes on other people determine the rewards (e.g., positive attention) and punishments (e.g., negative attention, being ignored) one will receive from them. Consequently, motivation is directed to make "good" impressions upon others in order to obtain favorable interpersonal rewards (Schlenker, 1980). If successful, managing one's self-presentation should result in positive interpersonal outcomes. Social anxiety results when the individual desires to make a certain impression upon other people, but holds there is little likelihood that she will successfully do so. This perceived discrepancy between one's goal and outcome expectancy is said to bear a direct relationship to one's experience of social anxiety. The more concerned one is about making a particular impression on others and/or the more consistent one's belief that he is unable to make those impressions, the more socially anxious this individual will tend to be.

Leary and Atherton (1986) have recently refined a portion of the self-presentational model by applying Bandura's (1977) distinction between self-efficacy expectancies and outcome expectancies. Borrowing from self-efficacy theory, the subjective probability of

making a desired impression may be broken down into self-presentational efficacy expectancies and self-presentational outcome expectancies. A "self-presentational efficacy expectancy" is the subjective probability that one can perform in a particular manner which is intended to convey a certain impression, whereas a "self-presentational outcome expectancy" is the subjective probability of actually making a particular impression given that one performs a certain behavior. Social anxiety should be minimal when both types of expectancies are high, as the person believes she or he can perform the self-presentational behavior and that it will result in the desired effect upon the audience. However, social anxiety will occur in situations in which either or both of the expectancies are low, assuming there is at least some motivation to make a particular impression.

It is also proposed in the self-presentational model of social anxiety that an assessment process is activated in situations in which the self-presentational goal is important to the person or some impediment exists to one's social performance. If this assessment process leads to the expectation that one will be successful in creating the desired impression on the audience, then positive affect will result. If, on the other hand, the

assessment process results in the expectation that one will be unable to create the desired impression, then negative affect will ensue. This relationship between social anxiety and self-presentational concerns is supported in the literature (Arkin, Appelman, & Burger, 1980; Arkin, Lake, & Baumgardner, 1986; Asendorpf, 1987; Baumgardner & Brownlee, 1987; Beck & Emery, 1985; Carver & Scheier, 1986; Leary, 1983a; Leary & Schlenker, 1981; Leary, Kowalski, & Campbell, under review; Schlenker, 1987; Schlenker & Leary, 1982, 1985; Snyder & Smith, 1986).

Research on the nature of the cognitions of socially anxious people reveals generalized assumptions that other people are critical and evaluative. Compared to less anxious persons, highly socially anxious people seem to approach interpersonal situations with lower expectations of being able to make favorable impressions on others. Interestingly, it does not appear that socially anxious individuals believe that other people make more favorable impressions than they themselves do; rather, highly socially anxious people seem to think that they and everyone else make less desirable impressions. Compared to highly socially anxious persons, it is those low in social anxiety who, though they agree with the highly socially anxious about the impressions most other people

make, believe they personally would be judged more positively than most others (Leary, Kowalski, & Campbell, under review). Such a finding suggests the existence of some self-serving bias in less socially anxious individuals. The topic of self-serving bias will be considered in more depth later.

Research has suggested that socially anxious subjects engage in self-defeating causal attributions for both positive and negative outcomes in hypothetical problematic (as determined by a survey of shy people, Zimbardo, 1977) events (Teglasi & Hoffman, 1982). It appears that studying excesses of specific types of cognitive activity (e.g., self-defeating causal attributions, negative self-statements), rather than anxiety-induced deficits or the absence of positive coping talk, is more critical to our understanding of social anxiety and other anxiety states (Smith, Ingram, & Brehm, 1983; Teglasi & Hoffman, 1982). Such cognitive excesses, as revealed in self-focused, negative thought patterns that eventually result in dysphoric affect, have been labelled "anxious self-preoccupation" (Sarason, 1975). It is further hypothesized that this anxious self-preoccupation includes cognitions of self-derogation, concern about poor performance, self-doubt, and anticipation of loss of or harm to self-esteem.

Research has supported the existence of a relationship between social anxiety and these patterns of anxious self-preoccupation (Asendorpf, 1987; Cacioppo, Glass, & Merluzzi, 1979; Kanter & Goldfried, 1979; Sutton-Simon & Goldfried, 1979).

Recently, studies have shown a relationship between social anxiety and depression (e.g., Pilkonis, Feldman, & Himmelhoch, 1981; Traub, 1983). Apparently, shy people tend to be more depressed than nonshy people (Pilkonis, Feldman, Himmelhoch, & Cornes, 1980; Traub, 1983). Additionally, Morris and Maddux (1985, cited in Leary, Maddux, & Kowalski, under review) have suggested that social anxiety and depression share similar patterns of expectancies about interpersonal abilities and goal attainment. Therefore, it seems important to take a look at the phenomenon of depression, as it may shed some light on our understanding of social anxiety.

In the reformulated learned helplessness model, Abramson, Seligman, and Teasdale (1978) have proposed an attributional model of depression in which depressive symptomatology is associated with a specific attributional style. Specifically, it has been demonstrated that depressives tend to attribute bad outcomes to internal, stable, and global causes, whereas nondepressives tend to attribute negative outcomes to

external, unstable, and specific causes (e.g., Anderson, Horowitz, & French, 1983; Raps, Peterson, Reinhard, Abramson, & Seligman, 1982; Seligman, Abramson, Semmel, & von Baeyer, 1979). When lack of control over an event with a negative outcome is attributed to internal factors, self-esteem suffers, as self-deprecating cognitions ensue. For example, an individual who fails an exam and blames it on his or her lack of intelligence would be making an internal attribution for the negative outcome of this event. One can easily imagine that such self-blaming cognitions would eventually take their toll on an individual's self-esteem. In fact, deficits in self-esteem have been identified as a major component of depression (Abramson, Seligman, & Teasdale, 1978; Beck, 1967; Rehm, 1977).

Self-esteem has also been associated with social anxiety, as a substantial negative correlation seems to exist between these two characteristics (Cheek & Buss, 1981; Clark & Arkowitz, 1975; Leary, 1983a; McCroskey, 1977; Zimbardo, 1977). Applying the attributional model, then, internal attributions for negative outcomes result in decreased self-esteem. Given that social anxiety is generally viewed as a socially undesirable quality (Zimbardo, 1977), the individual who attributes unfavorable social encounters to his or her personal

social anxiousness will likely feel lowered self-esteem (Leary, 1983a).

People who describe themselves as shy do express a helpless inability to change their social anxiousness, a characteristic they do not like in themselves (Zimbardo, 1977). Furthermore, studies have supported the hypothesis that highly socially anxious individuals tend to make stable, internal attributions for their social failures (Anderson & Arnoult, 1985; Arkin, Appelman, & Burger, 1980; Girodo, Dotzenroth, & Stein, 1981; Teglasi & Fagin, 1984; Teglasi & Hoffman, 1982). This tendency has been described as the reversal of the self-serving bias in causal attributions (Hope, Gansler, & Heimberg, 1989; Miller & Ross, 1975). That is, socially anxious people tend to attribute social failures to internal causes and to attribute social successes to external causes, thereby failing to self-enhance. Less socially anxious people, on the other hand, are likely to employ a self-serving bias in which they attribute more responsibility to themselves for positive than for negative outcomes (Arkin, Appelman, & Burger, 1980; Girodo, Dotzenroth, & Stein, 1981; Hope, Gansler, & Heimberg, 1989; Teglasi & Fagin, 1984; Teglasi & Hoffman, 1982). As noted above, a similar attributional pattern has been found in depressed people in whom there seems

to be a failure to ascribe to self-enhancing attributions for successful outcomes (Abramson, Seligman, and Teasdale, 1978; Johnson, Petzel, Zarantonello, & Johnson, 1985). Interestingly, the findings of Teglasi and Hoffman (1982) suggest that this attributional pattern for shy subjects is specific to social situations, as shy subjects assumed more responsibility than nonshy subjects for negative outcomes and less responsibility for positive outcomes in social-oriented but not in task-oriented scenarios.

In terms of Schlenker and Leary's (1982) self-presentational model of social anxiety, the reversal of the self-serving bias in the socially anxious person can be explained as a viable strategy for impression management. If a social interaction is an apparent failure, it is better to take responsibility (that is, make an internal attribution) for the failure at that point rather than to make an additional mistake by not recognizing the initial failure. If the individual succeeds in a social interaction, she will not want to assume credit (that is, she will make an external attribution) for the success because others may then expect equally effective performance in future situations. Hence, damage to one's self-presentational goals in present and future interactions is minimized by

the reversal of the self-serving bias. The reversed self-serving bias, therefore, acts as a self-handicapping or self-protective strategy for the socially anxious individual (Arkin, Appelman, & Burger, 1980; Arkin, Lake, & Baumgardner, 1986; Beck & Emery, 1985; Hope, Gansler, & Heimberg, 1989; Leary & Atherton, 1986; Snyder & Smith, 1983). Further support for this self-presentational view of social anxiety is provided by a study in which subjects expected further personal interaction with another person (Greenberg, Pyszczynski, & Stine, 1985). It was found that subjects low in social anxiety presented a very positive self-image, whereas subjects high in social anxiety did not. Again, a parallel seems to exist between the self-serving bias in nondepressives and low socially anxious people and the self-denigrating bias in depressives and high socially anxious people (Greenberg, Pyszczynski, & Stine, 1985).

In addition to studying attributional patterns in both depression and socially anxiety, researchers have investigated another aspect of thinking style, that is, personal beliefs. Much of the research in this area has been directed toward assessing irrational beliefs using the Irrational Beliefs Test (IBT; Jones, 1969) based on Ellis' (1962) rational-emotive model of emotional disturbance. A moderate correlation has been reported

between irrational beliefs and depression (Nelson, 1977). There is evidence that socially anxious individuals exhibit irrational beliefs regarding the necessity of others' approval (Ellis, 1962; Goldfried & Sobocinski, 1975). Such a finding fits very well with one of the defining features of social anxiety, that is, the fear of being negatively evaluated by others (Beck & Emery, 1985; Ingram & Kendall, 1987; Leary, 1983a; Smith, Ingram, & Brehm, 1983; Watson & Friend, 1969). In fact, a significant correlation has been found between the tendency to hold irrational beliefs and fear of negative evaluation (Davison, Feldman, & Osborn, 1984; Goldfried & Sobocinski, 1975) as well as social avoidance and distress (Sutton-Simon & Goldfried, 1979). In addition, social anxiety has also been found to correlate with other irrational beliefs, including anxious overconcern about future misfortune and high self-expectations (Goldfried & Sobocinski, 1975). However, other researchers (e.g., Craighead, Kimball, & Rehak, 1979; Glass, Merluzzi, Biever, & Larsen, 1982) have either failed to replicate some of the findings or have found confusing results (e.g., Deffenbacher, Zwemer, Whisman, Hill, & Sloan, 1986, whose results did not converge in terms of irrational beliefs operative in fear of negative evaluation and in social avoidance and distress) with

regard to the relationship between irrational beliefs and social anxiety. Arnkoff and Glass (1989) propose that the mixed results in this area may exist because the most widely used beliefs measure, the Irrational Beliefs Test (Jones, 1969), assesses a general tendency toward irrationality as opposed to specific beliefs about social interaction.

With regard to Schlenker and Leary's (1982) self-presentational model of social anxiety, the tendency to ascribe to irrational beliefs helps to explain the socially anxious person's sensitivity to interpersonal evaluation and motivation toward self-handicapping strategies (such as the reversed self-serving bias). In particular, the irrational belief concerning the necessity of others' approval fits with the self-presentational model's proposal that greater social anxiety will result from greater importance afforded to the standard or goal of a social interaction. In addition, the irrational belief pertaining to high self-expectations also makes sense from the self-presentational model, as this view states that the degree of social anxiety one experiences will be inversely related to one's expectations for the outcome of the social situation. If one has very high expectations for the outcome of a social interaction, there is increased

likelihood of a perceived discrepancy between one's goal and expectancy in the situation. Hence, more intense social anxiety might be expected from persons who maintain irrational beliefs, especially those related to high personal expectations and the need for approval from others.

Up to this point, two aspects of cognitive functioning, attributional styles and irrational beliefs, have been considered with regard to depression and social anxiety. Another cognitive construct which has gained research attention, particularly in the area of depression, deals with cognitive distortions. Cognitive distortions have been described as involving "active information processing on the part of the person but include inaccurate or 'crooked' processing" (Ingram & Kendall, 1987, p. 526). Previous research has indicated that depressed individuals engage in specific cognitive distortions which commonly overemphasize negative information to the relative exclusion of the positive (Beck, 1967, 1970; Chabon & Robins, 1986; Hammen & Krantz, 1976; Krantz & Hammen, 1979). Such biased interpretation and evaluation only serve to perpetuate and/or increase depressed mood. It has been hypothesized that these dysfunctional cognitions are at the very core of the complex phenomenon of depression.

Beck (1967, 1970, 1974), Seligman (1974, 1975), Hammen and Glass (1975), Abramson, et al. (1978) and others have proposed cognitive explanations which emphasize dysfunctional perceptions and interpretations of information as they contribute to the development and maintenance of depressed mood. Beck's (1970) view, sometimes referred to as the cognitive distortion model of depression (e.g., McLean, 1976), is that depressed people tend to distort information as a result of committing certain cognitive errors: (1) arbitrary inference--the process of reaching a conclusion without supporting or in spite of contradictory evidence; (2) overgeneralization--the process of reaching a general conclusion based on a single event, conceptualizing the overall experience based on this detail, thereby ignoring any other more salient aspects of the situation; (3) magnification--the propensity to exaggerate the significance or meaning of an event; (4) cognitive deficiency--the tendency to disregard or fail to integrate an important aspect of life experience. Rather than bizarre and rare occurrences, these cognitive distortions (or dysfunctional cognitions) more likely appear to be exaggerations of fairly typical responses in situations. Evidently, depressives characteristically perceive and interpret information in maladaptive ways

(Beck, 1970; Hammen & Krantz, 1976; Krantz & Hammen, 1979). Certainly, dysfunctional cognitions per se are not exclusive to depression, as other forms of psychopathology seem to be affected by cognitive distortions (Goldfried & Robins, 1983; Mahoney, 1974; Shapiro, 1965). As discussed above, the socially anxious individual can be characterized by his anxious self-preoccupation which entails various dysfunctional cognitions about the self. Indeed, the research reviewed here has demonstrated an important link between maladaptive cognitions and social anxiety (e.g., Cacioppo, Glass & Merluzzi, 1979; Glass, Merluzzi, Biever, & Larsen, 1982; Goldfried & Sobocinski, 1975; Gormally, Sipps, Raphael, Edwin, & Varvil-Weld, 1981; Smith, Ingram, & Brehm, 1983; Turner, Beidel, & Larkin, 1986). However, studies to date have not looked at the existence of depressogenic cognitive distortions in socially anxious people.

The concepts of attributional patterns and irrational beliefs reviewed above share a common approach to understanding the phenomenon of social anxiety, that is, they are cognitive constructs which attempt to address people's thinking styles. Furthermore, the findings in each of these areas with regard to social anxiety seem to be compatible. A third cognitive construct, cognitive

distortion, was discussed with regard to research on depression. In further delineating a cognitive framework for understanding social anxiety, it would be worthwhile to study the potential existence of cognitive distortions in socially anxious people. Indeed, given the evidence for some degree of correlation between depression and social anxiety, similar thinking styles may be shared between depressed and socially anxious individuals.

A fair amount of research has investigated attributional patterns in socially anxious people. Although studies have also looked at irrational beliefs in social anxiety, the most frequently used measure of irrational beliefs (Irrational Beliefs Test; Jones, 1969) has been criticized for lacking discriminant validity (Smith, in press, cited in Arnkoff & Glass, 1989). Certainly, cognitive schemata can be assessed through beliefs or self-statements (assuming a suitable measure can be used). However, there may be advantages to using methods which do not rely as much on one's awareness of his or her cognitive processes (Arnkoff & Glass, 1989), that is, methods which depend largely on self-report (Smith, in press, cited in Arnkoff & Glass, 1989). Such a view is substantiated by evidence that individuals may not have direct introspective access to relevant aspects of their own higher-order cognitive processes (Nisbett

& Wilson, 1977). Hence, the present study will take a different approach to studying the phenomenon of social anxiety, as it will address cognitive distortion using measures which do not depend greatly on self-report of beliefs or self-statements.

In sum, research indicates that socially anxious persons seem to engage in cognitive activities that are distorted in some way. The present study is designed to investigate cognitive distortions as they occur in socially anxious individuals. More specifically, given the existence of dysfunctional cognitions independently found in both depression and in social anxiety, and given the apparent relationship between these two psychological phenomena, do socially anxious people cognitively distort in ways similar to depressives? If so, there are important therapeutic implications for highly socially anxious people. Little research has addressed the role of cognitive distortions per se in social anxiety, and none has looked specifically at evaluating the relative contributions of social anxiety versus depression to cognitive distortions.

Schlenker and Leary's (1982) self-presentational model is compatible with the (hypothesized, at this point) existence of depressogenic cognitive distortion in socially anxious individuals. If information from

social interactions tends to get distorted (as Beck (1970) describes, for example, positive aspects of a social situation are minimized, whereas negative aspects are magnified) by the socially anxious individual, then there is an increased likelihood of greater perceived discrepancy between the individual's goal versus his or her expectancies (i.e., self-presentational outcome expectancies and/or self-presentational efficacy expectancies). This greater discrepancy will then result in increased social anxiety. Further, the negative phase of assessment process described by Schlenker and Leary may also be perpetuated by cognitive distortions and may consequently lead to an increase in negative affect.

In the present investigation, a cognitive distortion measure previously used in depression research, the Cognitive Distortion Questionnaire (CDQ; Krantz & Hammen, 1979), which consists of stories followed by questions with different types of responses, was given to subjects possessing varying degrees of social anxiety and fear of negative evaluation. A portion of the possible responses to the story questions in the CDQ exemplify the types of cognitive distortion described by Beck (1970). In previous research, depressives, as compared to nondepressives, have evidenced greater cognitive distortion, as shown by their selection of more

depressed-distorted responses on the Cognitive Distortion Questionnaire (Krantz & Hammen, 1979). In addition, it has been suggested that this pattern of depressogenic cognitive distortion is not influenced by situational factors, as the different story themes, either "social-interpersonal" or "achievement-competence", in the CDQ had no apparent influence on the pattern of findings in depressed subjects (Krantz & Hammen, 1979; Shaw & Dobson, 1981).

The central hypothesis of the present study predicts that more highly socially anxious subjects (as determined by scores on the Social Avoidance and Distress scale and the Fear of Negative Evaluation scale), compared to less socially anxious subjects, select more depressed-distorted responses on the Cognitive Distortion Questionnaire. It might be expected that socially anxious subjects would respond to events differently based on whether or not there is an interpersonal aspect to the situation. Close examination of the stories used in the CDQ questionnaire reveals that all involve some interpersonal component with or without an achievement component. Therefore, a set of stories involving achievement themes without an interpersonal component were also constructed and presented to subjects. Given the interpersonal aspect of social anxiety, it is

predicted that more highly socially anxious subjects will choose more depressed-distorted responses in stories with interpersonal themes (i.e., the interpersonal or interpersonal-achievement stories). Level of depression will be covaried out in order to determine if social anxiety contributes to cognitive distortion independently of depression.

METHOD

Subjects

One-hundred-twenty-three undergraduate psychology students at Loyola University of Chicago were each given a packet of questionnaires designed to assess social anxiety, depression, trait anxiety, and cognitive distortion. Data were analyzed on 114 subjects, as nine subjects returned incomplete questionnaires. Approximately three-quarters of the sample were female and one-quarter was male. In return for their voluntary participation in this study, students received extra credit which could be applied to their psychology class.

Materials

The packet of self-report questionnaires administered to all subjects included the following: Social Avoidance and Distress scale (SAD; Watson & Friend, 1969); Fear of Negative Evaluation scale (FNE; Watson & Friend, 1969); State-Trait Anxiety Inventory--Trait form (STAI--Trait; Spielberger, Gorsuch, & Lushene, 1968); Beck Depression Inventory (BDI; Beck, Ward, Mendelson, Mock, & Erbaugh, 1961); Cognitive Distortion Questionnaire (CDQ; Krantz & Hammen, 1979) with

additional items developed for this study.

The SAD scale is a 28-true/false-item measure of dispositional social anxiousness. It is divided into two subscales, social avoidance (a behavioral concomitant of social anxiety) and social distress (a cognitive concomitant of social anxiety). For each item, subjects indicate "true" if the statement is true or mostly true in describing themselves, and they indicate "false" if the statement is false or mostly false in describing themselves. An example of a statement from the social avoidance subscale is "I try to avoid situations which force me to be very sociable"; an example from the social distress subscale is "I usually feel relaxed when I am with a group of people." Statements are worded both positively and negatively. The SAD has demonstrated adequate reliability (ranging from +.68 to +.79 for test-retest reliability) and strong criterion and construct validity (Watson & Friend, 1969).

The FNE is comprised of 30-true/false-items which assess the fear of loss of social approval, e.g., "I rarely worry about seeming foolish to others." Worded in both positive and negative directions, students indicate whether each statement is true (or mostly true) or false (or mostly false) in describing themselves. The FNE possesses acceptable reliability (test-retest

reliabilities range between $+0.78$ and $+0.96$) and strong criterion and construct validity (Watson & Friend, 1969).

The STAI--Trait form is a 20-item measure of general anxiety as a personality trait. On a four-point scale with 1 meaning "almost never" to 4 meaning "almost always", subjects respond to each statement according to how they generally feel. An example of a statement from the STAI--Trait form is "I become tense and upset when I think about my present concerns." Statements are worded in both a positive and a negative direction. Alpha reliabilities for undergraduates on the STAI--Trait Form are $.89$ to $.90$ (Spielberger, Gorsuch, & Lushene, 1968).

The BDI is a 21-item questionnaire designed to assess level of depression. Items pertain to various somatic, cognitive, behavioral, and affective signs of depression. For each item, subjects are given four statements (assigned a score from 0 to 3) from which they choose the one that best describes how they have been feeling in the past week. Beck (1967) has indicated that scores of ten or above are indicative of clinically significant levels of depression.

The CDQ is a story task in which participants select from among various response alternatives the one that most approximates their assessment of the character's

likely response. Six brief stories are presented that involve a character (the same sex as the subject) in a potentially problematic situation common to this college-age group, such as being home in the dorm on a Friday night or making a class presentation in which one hoped to perform well. After each story, there are three or four questions followed by four possible responses. These questions pertain to the character's feelings, thoughts, and expectations in the particular situation. The four possible responses include one each of the following types of responses: depressed-distorted, depressed-nondistorted, nondepressed-distorted, and nondepressed-nondistorted. Distortion is considered to occur when logically unjustified conclusions are made from the information presented. In this way, the CDQ assesses biased cognitions. As an example from the CDQ, one story involves Peggy (or Paul) who was described as having joined a particular organization and was encouraged by friends to run for president of the organization. She runs but loses the election. Subjects are then instructed to "put yourself in Peggy's (Paul's) place, trying as vividly as you can to imagine what she (he) probably thought and felt." Following this instruction, there are a series of questions, such as: "When you first heard you'd lost, you immediately: (a)

feel bad and imagine you've lost by a landslide (depressed-distorted); (b) shrug it off as unimportant (nondepressed-distorted); (c) feel sad and wonder what the total counts were (depressed-nondistorted); (d) shrug it off, feeling I've tried as hard as I could (nondepressed-nondistorted). Further evidence for convergent and discriminant validity of the CDQ is provided by Frost and MacInnis (1983). A copy of the cognitive distortion questionnaire (the male version) including the additional set of scenarios developed for this study appears in the Appendix.

As three of the stories are strictly interpersonal situations (e.g., meeting new people at a job) and three are interpersonally-involved achievement situations (e.g., making a presentation in front of a class) in the CDQ, three additional stories were developed for this study involving achievement situations with no direct interpersonal component (e.g., receiving LSAT scores in the mail). Inclusion of items that are not interpersonally involved should provide a more stringent test of social anxiety effects. The achievement stories follow the same format as the remainder of the CDQ stories. Based upon the unanimous agreement of six raters blind to the hypotheses, responses to the questions following each story were categorized as

depressed-distorted, depressed-nondistorted, nondepressed-distorted, or nondepressed-nondistorted.

Procedure

Subjects completed a packet of questionnaires which included the SAD scale, the FNE scale, the CDQ (with three additional stories involving achievement/no interpersonal themes), the STAI-Trait form, and the BDI. Orders of presentation of the measures were counterbalanced so as to eliminate order effects. Additional measures were given but not analyzed as part of this study.

In an effort to obtain a "pure" measure of social anxiety, the effects of depression and generalized anxiety are controlled for by covarying out results from the BDI and STAI-Trait questionnaires. Data were analyzed to test the hypothesis that socially anxious people cognitively distort in ways similar to depressives and to determine whether such distortions are maintained in socially anxious people when the relative effect of depression is partialled out of the complex relationship between social anxiety, depression, and depressogenic distortions.

RESULTS

Two 3 x 3 repeated measures designs were employed using level (high vs. medium vs. low) of social anxiety and fear of negative evaluation as the between-subjects factor and type of CDQ scenario (interpersonal, achievement, interpersonal-achievement) as the within-subjects factor. Repeated measures analyses of variance (ANOVAs) were computed on each of the dependent variables (i.e., percentage of the total number of responses corresponding to each of the four possible CDQ responses: depressed-distorted, depressed-nondistorted, nondepressed-distorted, and nondepressed-nondistorted). Repeated measures analyses of covariance (ANCOVAs) were also performed using depression and trait anxiety as covariates. Whenever the interaction term or main effect terms in the ANOVAs or ANCOVAs were significant at the .05 level, simple effects analyses were performed to determine where the significant effects existed. Scheffe's test was calculated to determine pairwise mean differences among individual cells and marginals when indicated. Scheffe's test was used to follow up significant main effects and to follow up significant simple effects analyses resulting from an interaction.

In cases in which a trend ($p < .10$) was evident, Scheffe's test was also employed to probe the results. Scores on the SAD ranged from 0 to 27 with a mean of 8.62 and a standard deviation of 6.47. Scores on the FNE ranged from 0 to 30 with a mean of 14.33 and a standard deviation of 8.32. Based on their scores on the SAD and the FNE, subjects in the present study were divided into high (SAD: 11 - 27, $n = 33$; FNE: 20 - 30; $n = 36$), medium (SAD: 5 - 10, $n = 42$; FNE: 11 - 19, $n = 39$), and low (SAD: 0 - 4, $n = 39$; FNE: 0 - 10, $n = 39$) in social anxiety and in fear of negative evaluation.

The Beck Depression Inventory (BDI) was used in order to covary out depression in the ANCOVAs. The mean BDI score was 8.42 with a standard deviation of 9.05 and a range of 0 to 51. The State-Trait Anxiety Inventory--Trait Form was employed as a measure of trait anxiety which was also covaried out. With a range of 21 to 67, the mean STAI-Trait score was 41.16 with a standard deviation of 10.26.

The central hypotheses of this study concern the depressed-distorted responses on the CDQ. Therefore, the results will be organized so that each of the four types of responses (depressed-distorted, depressed-nondistorted, nondepressed-distorted, nondepressed-nondistorted) are considered separately. Specific

hypotheses were not made for the depressed-nondistorted, nondepressed-distorted, or nondepressed-nondistorted responses. However, secondary predictions were generated based on type of scenario (interpersonal, interpersonal-achievement, achievement), and relevant results will be addressed as they occur.

DEPRESSED-DISTORTED RESPONSES

Social Avoidance and Distress (SAD) scale

Observed and adjusted cell means for the percentages of depressed-distorted responses in the SAD condition are shown in Table 1. It was expected that subjects higher in social anxiety (as measured by the SAD) would give more depressed-distorted responses than subjects lower in social anxiety. An analysis of variance performed on the percentage of subjects' depressed-distorted responses revealed a significant interaction of SAD by type of scenario, $F(4,222) = 3.47, p = .009$, and a significant main effect of SAD, $F(2,111) = 31.10, p < .0001$. Simple effects analyses of the significant interaction term indicated that, across all three types of scenarios (interpersonal, interpersonal-achievement, achievement), high SAD subjects (M 's = 21.76 for interpersonal, 15.12 for interpersonal achievement, 18.85 for achievement) gave a significantly higher percentage of depressed-distorted responses as compared to medium SAD subjects

Table 1. Observed and adjusted cell means of the percentages of depressed-distorted responses as a function of type of CDQ scenario and level of SAD and FNE.

	TYPE OF CDQ SCENARIO		
	INTERPERSONAL	INTERPERSONAL/ ACHIEVEMENT	ACHIEVEMENT
<u>Observed Means</u>			
High SAD	21.76	15.12	18.85
High FNE	17.42	14.86	14.58
<u>Adjusted Means</u>			
High SAD	17.10	11.96	14.98
High FNE	12.58	12.34	10.61
<u>Observed Means</u>			
Medium SAD	4.81	7.07	5.26
Medium FNE	6.85	5.77	6.64
<u>Adjusted Means</u>			
Medium SAD	6.33	8.15	6.62
Medium FNE	7.45	6.05	7.09
<u>Observed Means</u>			
Low SAD	3.82	6.31	3.44
Low FNE	4.49	7.23	4.95
<u>Adjusted Means</u>			
Low SAD	6.95	8.39	5.94
Low FNE	8.71	9.47	8.48


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(\bar{M} 's = 4.81, 7.07, 5.26) and to low SAD subjects (\bar{M} 's = 3.82, 6.31, 3.44), p 's < .01 by Scheffe's test.

An analysis of covariance on the percentage of subjects' depressed-distorted responses revealed a significant main effect of SAD, $F(2,109) = 9.14$, $p < .0001$, and a significant interaction of SAD by type of scenario, $F(4,221) = 3.20$, $p = .014$. Follow up analyses of the significant interaction term showed that subjects in the high SAD condition ($\bar{M} = 17.10$) chose a significantly higher percentage of depressed-distorted responses than subjects in either the medium SAD ($\bar{M} = 6.33$) or low SAD ($\bar{M} = 6.95$) conditions, p 's < .01 by Scheffe's test. This pattern held for the interpersonal scenarios and the achievement scenarios but not for the interpersonal-achievement scenarios. Neither level of depression nor trait anxiety were significant covariates, p 's > .05.

In short, results of both the ANOVA and ANCOVA supported the hypothesis that more highly socially anxious subjects would report a significantly higher percentage of depressed-distorted responses than less socially anxious subjects. Neither depression nor trait anxiety significantly influenced the pattern of results.

Fear of Negative Evaluation (FNE) scale

Observed and adjusted cell means for the percentages

of depressed-distorted responses in the FNE condition are given in Table 1. It was predicted that subjects higher in fear of negative evaluation (as assessed by the FNE) would report more depressed-distorted responses than subjects lower in fear of negative evaluation. An analysis of variance computed on the percentage of subjects' depressed-distorted responses revealed a significant main effect of FNE, $F(2,111) = 13.34$, $p < .0001$. Simple effects analyses showed high FNE subjects ($M = 15.62$) reported a significantly higher percentage of depressed-distorted responses than subjects in either the medium FNE ($M = 6.42$) or low FNE ($M = 5.56$) conditions, p 's $< .05$ by Scheffe's test.

Although the ANCOVA performed on the percentage of depressed-distorted responses showed a significant main effect of FNE ($F(2,109) = 3.58$, $p = .031$), simple effects analyses failed to reveal any significant differences among the FNE levels. However, inspection of the FNE group means suggests that the effect appears to be pulled primarily by subjects in the high FNE condition ($M = 11.84$) who differed from the medium FNE ($M = 6.86$) and low FNE ($M = 8.89$) subjects. Depression was not significant as a covariate ($p > .05$), although trait anxiety approached significance as a covariate ($p = .07$).

Thus, the ANOVA results confirmed the hypothesized prediction that subjects' higher in fear of negative evaluation would give a significantly greater percentage of depressed-distorted responses compared to subjects lower in fear of negative evaluation. Although the follow-up analyses of the significant ANCOVA did not find any significant differences, the FNE group means appear to follow a pattern similar to that found with the ANOVA, that is, high FNE subjects reported a greater percentage of depressed-distorted responses than medium or low FNE subjects. Depression level did not affect the pattern of results. Given the near-significance of trait anxiety as a covariate, it might be tentatively suggested that trait anxiety may play a role in subjects' tendency to give more depressed-distorted responses.

DEPRESSED-NONDISTORTED RESPONSES

Social Avoidance and Distress (SAD) scale

Table 2 shows the observed and adjusted cell means for the percentages of depressed-nondistorted responses with the SAD scale. An ANOVA calculated on the percentage of depressed-nondistorted responses revealed a significant main effect of type of scenario, $F(2,222) = 58.91$, $p < .0001$, and an effect of SAD which approached significance, $F(2,111) = 2.63$, $p = .077$. Simple effects analyses of the main effect of scenario showed that

Table 2. Observed and adjusted cell means of the percentages of depressed-nondistorted responses as a function of type of CDQ scenario and level of SAD and FNE.

	TYPE OF CDQ SCENARIO		
	INTERPERSONAL	INTERPERSONAL/ ACHIEVEMENT	ACHIEVEMENT
<hr/>			
<u>Observed Means</u>			
High SAD	26.76	27.94	38.15
High FNE	26.53	28.11	39.39
<u>Adjusted Means</u>			
High SAD	23.83	24.30	36.56
High FNE	24.14	25.21	37.86
<hr/>			
<u>Observed Means</u>			
Medium SAD	25.93	26.64	45.45
Medium FNE	24.54	26.10	43.62
<u>Adjusted Means</u>			
Medium SAD	26.89	27.75	45.79
Medium FNE	24.85	26.53	43.94
<hr/>			
<u>Observed Means</u>			
Low SAD	20.79	20.21	40.51
Low FNE	22.33	20.49	41.77
<u>Adjusted Means</u>			
Low SAD	22.76	22.73	41.76
Low FNE	24.41	22.96	42.97
<hr/>			

subjects reported a significantly higher percentage of depressed-nondistorted responses in the achievement scenarios ($\underline{M} = 41.65$) as compared either to the interpersonal scenarios ($\underline{M} = 24.41$) or to the interpersonal-achievement scenarios ($\underline{M} = 24.82$), p 's $< .01$ by Scheffe's test. Analyses which probed the SAD trend revealed no significant pairwise differences among the SAD levels, p 's $> .05$.

An ANCOVA on the percentage of depressed-nondistorted responses showed a significant main effect of type of scenario, $F(2,221) = 46.21$, $p < .0001$. Although an effect of SAD approached significance ($F(2,109) = 2.57$, $p = .081$), no significant SAD differences were obtained when this trend was probed, p 's $> .05$. Simple effects analyses of the significant main effect of scenario revealed that subjects gave a significantly higher percentage of depressed-nondistorted responses in the achievement scenarios ($\underline{M} = 41.37$) as compared to the interpersonal scenarios ($\underline{M} = 24.49$) or the interpersonal-achievement scenarios ($\underline{M} = 24.93$), p 's $< .01$. Although depression did not emerge as a significant covariate ($p > .05$), trait anxiety was significant as a covariate, $p = .029$. Hence, trait anxiety accounted for a significant portion of the variance in subjects' depressed-

nondistorted responses.

For the SAD conditions, both the ANOVA and ANCOVA revealed similar results with regard to subjects reporting a significantly greater percentage of depressed-nondistorted responses in the scenarios with an achievement-only theme as compared to either an interpersonal theme or interpersonal-achievement theme. This pattern of results did not depend on either the significant covariate of trait anxiety or the nonsignificant covariate of depression.

Fear of Negative Evaluation (FNE) scale

The observed and adjusted cell means for the percentages of depressed-nondistorted responses with the FNE scale are shown in Table 2. An ANOVA on the percentage of depressed-nondistorted responses revealed a significant main effect of type of scenario, $F(2,222) = 60.93$, $p < .0001$. Simple effects analyses showed that, compared to scenarios with an interpersonal theme ($M = 24.41$) or an interpersonal-achievement theme ($M = 24.82$), subjects reported a significantly greater percentage of depressed-nondistorted responses in scenarios with an achievement theme ($M = 41.65$), p 's $< .01$ by Scheffe's test.

An ANCOVA performed on the percentage of depressed-nondistorted responses showed a significant main effect

of type of scenario, $F(2,221) = 47.47, p < .0001$. Simple effects analyses revealed that subjects chose a significantly higher percentage of depressed-nondistorted responses when they read achievement scenarios ($M = 41.59$) than when they read interpersonal scenarios ($M = 24.47$) or interpersonal-achievement scenarios ($M = 24.90$), p 's $< .01$ by Scheffe's test. Whereas depression was not a significant covariate ($p > .05$), trait anxiety did reach significance as a covariate ($p = .031$).

With regard to the FNE conditions, the same pattern of results emerged from both the ANOVA and ANCOVA, as a significantly higher percentage of depressed-nondistorted responses was chosen when subjects read scenarios with achievement themes as compared either to interpersonal or interpersonal-achievement themes. These results were found even after trait anxiety (the only significant covariate in this case) was covaried out.

NONDEPRESSED-DISTORTED RESPONSES

Social Avoidance and Distress (SAD) scale

The observed and adjusted cell means for the percentages of nondepressed-distorted responses with the SAD scale are given in Table 3. An ANOVA calculated on the percentage of nondepressed-distorted responses showed a significant main effect of type of scenario, $F(2,222) = 10.05, p < .0001$, and a significant interaction of SAD

Table 3. Observed and adjusted cell means of the percentages of nondepressed-distorted responses as a function of type of CDQ scenario and level of SAD and FNE.

	TYPE OF CDQ SCENARIO		
	INTERPERSONAL	INTERPERSONAL/ ACHIEVEMENT	ACHIEVEMENT
<u>Observed Means</u>			
High SAD	11.09	13.39	11.55
High FNE	11.61	14.03	9.19
<u>Adjusted Means</u>			
High SAD	12.05	12.72	10.66
High FNE	13.31	14.15	8.39
<u>Observed Means</u>			
Medium SAD	14.14	13.07	7.07
Medium FNE	14.77	11.54	6.92
<u>Adjusted Means</u>			
Medium SAD	14.03	13.45	7.58
Medium FNE	14.43	11.42	6.89
<u>Observed Means</u>			
Low SAD	14.31	10.85	4.80
Low FNE	13.44	11.77	6.77
<u>Adjusted Means</u>			
Low SAD	13.47	11.13	5.18
Low FNE	12.08	11.77	7.60

by type of scenario, $F(4,222) = 2.54$, $p = .041$. Follow-up analyses revealed the following significant results: (1) for subjects low on the SAD scale, a significantly greater percentage of nondepressed-distorted responses was given in the interpersonal scenarios ($M = 14.31$) and the interpersonal-achievement scenarios ($M = 10.85$) as compared to the achievement scenarios ($M = 4.80$), $p < .01$ and $p < .05$ respectively by Scheffe's test; (2) for subjects who scored in the medium SAD range, a significantly higher percentage of nondepressed-distorted responses was reported in the interpersonal scenarios ($M = 14.14$) and the interpersonal-achievement scenarios ($M = 13.07$) than in the achievement scenarios ($M = 7.07$), $p < .01$ and $p < .025$ respectively by Scheffe's test. No significant differences were obtained for high SAD among the different scenarios ($p > .05$).

An ANCOVA on the percentage of nondepressed-distorted responses revealed a significant interaction of SAD by type of scenario, $F(4,221) = 2.52$, $p = .042$, and a significant main effect of type of scenario, $F(2,221) = 8.56$, $p < .0001$. The following significant results emerged from the follow up analyses: (1) for low SAD subjects, a significantly higher percentage of nondepressed-distorted responses was reported in scenarios with an interpersonal theme ($M = 13.47$) or an

interpersonal-achievement theme ($\bar{M} = 11.13$) versus scenarios with an achievement-only theme ($\bar{M} = 5.18$), $p < .01$ and $p < .05$ respectively by Scheffe's test; (2) for medium SAD subjects, a significantly greater percentage of nondepressed-distorted responses was given in those scenarios with either an interpersonal theme ($\bar{M} = 14.03$) or an interpersonal-achievement theme ($\bar{M} = 13.45$) as compared to an achievement-only theme ($\bar{M} = 7.58$), $p < .025$ and $p < .05$ respectively by Scheffe's test. There were no significant differences in the high SAD subjects across the different scenarios ($p > .05$). Both depression ($p = .001$) and trait anxiety ($p = .004$) reached significance as covariates.

Regarding the social anxiety conditions, the ANOVA and ANCOVA revealed the same pattern of results in which low and medium SAD subjects gave a significantly greater percentage of nondepressed-distorted responses in interpersonal and interpersonal-achievement scenarios than in achievement-only scenarios. Although both depression and trait anxiety were significant covariates, they did not alter the pattern of results. Fear of Negative Evaluation (FNE) scale

Table 3 contains the observed and adjusted cell means for the percentages of nondepressed-distorted responses with the FNE scale. Results obtained from an

ANOVA performed on the percentage of nondepressed-distorted responses showed a significant main effect of type of scenario, $F(2,222) = 10.82$, $p < .0001$. Simple effects analyses revealed that a significantly greater percentage of nondepressed-distorted responses was chosen when subjects read scenarios with an interpersonal theme ($M = 13.32$) or an interpersonal-achievement theme ($M = 12.40$) as compared to an achievement theme ($M = 7.59$), p 's $< .01$ by Scheffe's test.

An ANCOVA calculated on the percentage of nondepressed-distorted responses revealed a significant main effect of type of scenario, $F(2,221) = 9.24$, $p < .0001$. Simple effects analyses showed that a significantly higher percentage of nondepressed-distorted responses was reported in the interpersonal scenarios ($M = 13.27$) and the interpersonal-achievement scenarios ($M = 14.45$) versus the achievement scenarios ($M = 7.63$), p 's $< .01$ by Scheffe's test. Both depression ($p = .001$) and trait anxiety ($p = .005$) were significant covariates.

For the FNE conditions, the same pattern of results emerged from the ANOVA and ANCOVA and showed that a significantly higher percentage of nondepressed-distorted responses was reported in the scenarios with interpersonal or interpersonal-achievement themes as compared to achievement themes. This pattern held even

after depression and trait anxiety were covaried out.

NONDEPRESSED-NONDISTORTED RESPONSES

Social Avoidance and Distress (SAD) scale

Table 4 shows the observed and adjusted cell means for the percentages of nondepressed-nondistorted responses with the SAD scale. An ANOVA performed on the percentage of nondepressed-nondistorted responses showed a significant main effect of SAD, $F(2,111) = 17.05$, $p < .0001$, and a significant main effect of type of scenario, $F(2,222) = 18.73$, $p < .0001$. Simple effects analyses of the main effect of SAD revealed that low SAD subjects ($M = 58.18$) reported a significantly greater percentage of nondepressed-nondistorted responses than medium SAD subjects ($M = 50.04$) who, in turn, reported a significantly greater percentage of nondepressed-nondistorted responses than high SAD subjects ($M = 38.13$), p 's $< .05$ by Scheffe's test. Simple effects analyses of the main effect of scenario showed that a significantly greater percentage of nondepressed-nondistorted responses was given in interpersonal scenarios ($M = 52.89$) and interpersonal-achievement scenarios ($M = 53.25$) than in achievement scenarios ($M = 42.00$), p 's $< .01$ by Scheffe's test.

Results obtained from an ANCOVA on the percentage of nondepressed-nondistorted responses showed a

Table 4. Observed and adjusted cell means of the percentages of nondepressed-nondistorted responses as a function of type of CDQ scenario and level of SAD and FNE.

	TYPE OF CDQ SCENARIO		
	INTERPERSONAL	INTERPERSONAL/ ACHIEVEMENT	ACHIEVEMENT
<u>Observed Means</u>			
High SAD	40.39	43.00	31.00
High FNE	44.50	42.47	36.47
<u>Adjusted Means</u>			
High SAD	47.04	57.42	37.30
High FNE	50.03	47.80	42.80
<u>Observed Means</u>			
Medium SAD	55.39	52.86	42.05
Medium FNE	53.82	56.28	42.62
<u>Adjusted Means</u>			
Medium SAD	52.83	50.28	39.86
Medium FNE	53.25	55.70	41.87
<u>Observed Means</u>			
Low SAD	60.95	62.33	51.26
Low FNE	59.69	60.15	46.49
<u>Adjusted Means</u>			
Low SAD	56.68	50.49	47.14
Low FNE	54.73	55.41	40.91

significant main effect of type of scenario, $F(2,221) = 14.04$, $p < .0001$. Although a significant main effect of SAD was indicated ($F(2,109) = 3.70$, $p = .028$), no significant differences among levels of SAD were found in the follow-up analyses (p 's $> .05$). Simple effects analyses of the main effect of scenario revealed that a significantly greater percentage of nondepressed-nondistorted responses was chosen when subjects read scenarios with interpersonal themes ($M = 52.19$) or interpersonal-achievement themes ($M = 52.73$) as compared to achievement themes ($M = 41.43$), p 's $< .01$ by Scheffe's test. Neither depression nor trait anxiety were significant covariates.

With regard to the SAD conditions in which it was found that a significantly greater percentage of nondepressed-nondistorted responses was reported in scenarios with interpersonal or interpersonal-achievement versus achievement themes, the same results were obtained by both the analysis of variance and the analysis of covariance. Although both the ANOVA and ANCOVA indicated an effect of level of SAD, only the ANOVA follow-up analyses showed a pattern of significant differences, as subjects lower in social anxiety gave a significantly greater percentage of nondepressed-nondistorted responses

than subjects higher in social anxiety. Although neither depression nor trait anxiety reached significance as covariates, the pattern of results did differ somewhat once these factors were included in the analyses.

Fear of Negative Evaluation (FNE) scale

The observed and adjusted cell means for the percentages of nondepressed-nondistorted responses with the FNE scale are given in Table 4. Results from an ANOVA conducted on the percentage of nondepressed-nondistorted responses revealed a significant main effect of FNE, $F(2,111) = 8.23, p < .0001$, and a significant main effect of type of scenario, $F(2,222) = 18.83, p < .0001$. Simple effects analyses of the FNE main effect showed that both low FNE ($M = 55.44$) and medium FNE ($M = 50.91$) subjects gave a significantly greater percentage of nondepressed-nondistorted responses than high FNE subjects ($M = 41.15$), p 's $< .05$ by Scheffe's test. Simple effects analyses of the scenario main effect showed that a significantly higher percentage of nondepressed-nondistorted responses was reported in scenarios with an interpersonal theme ($M = 52.89$) or an interpersonal-achievement theme ($M = 53.25$) as compared to scenarios with an achievement-only theme ($M = 42.00$), p 's $< .01$ by Scheffe's test.

An ANCOVA performed on the percentage of

nondepressed-nondistorted responses showed a significant main effect of type of scenario, $F(2,221) = 13.91$, $p < .0001$. Simple effects analyses revealed that a significantly higher percentage of nondepressed-nondistorted responses was given in the interpersonal scenarios ($M = 52.67$) and the interpersonal-achievement scenarios ($M = 52.97$) than in the achievement scenarios ($M = 41.86$), p 's $< .01$ by Scheffe's test. Neither depression nor trait anxiety emerged as a significant covariate.

With regard to the FNE conditions, similar results were obtained in terms of the effect of type of scenario, as a significantly higher percentage of nondepressed-nondistorted responses was reported in the interpersonal and interpersonal-achievement scenarios as compared to the achievement scenarios. Even though neither depression nor trait anxiety reached significance as covariates, the ANCOVA did not evidence the same pattern of results obtained with the ANOVA, the latter analysis revealing that subjects low and medium in terms of fear of negative evaluation gave a significantly greater percentage of nondepressed-nondistorted responses as compared to subjects high in fear of negative evaluation.

In conclusion, the central predictions that subjects higher in social avoidance and distress and subject

higher in fear of negative evaluation give more depressed-distorted responses than subjects lower in social avoidance and distress and subjects lower in fear of negative evaluation were supported. Significant results were also obtained after depression and trait anxiety were used as covariates in the SAD conditions but not in the FNE conditions (even though neither covariate reached significance in these analyses). All of the analyses involving depressed-nondistorted responses showed that a significantly higher percentage of these responses was given in the scenarios with achievement themes than in scenarios with interpersonal or interpersonal-achievement themes. In addition, most of the analyses involving nondepressed-distorted and nondepressed-nondistorted responses revealed that a significantly greater percentage of these responses was reported in interpersonal or interpersonal-achievement scenarios as compared to achievement-only scenarios. Given that the analyses used percentages of the total number of responses and that the depressed-distorted response variable was significant, it is not surprising that the other response variables (depressed-nondistorted, nondepressed-distorted, nondepressed-nondistorted) were often also significant. In general, similar patterns of results were found in the

corresponding ANOVAs and ANCOVAs. Although depression level and trait anxiety level did not always reach significance as covariates, the latter was significant more often than the former.

DISCUSSION

Taken as a whole, the results of this investigation support the existence of depressogenic-type cognitive distortions in social anxiety. As predicted, compared to less socially anxious individuals, more highly socially anxious subjects selected a greater percentage of depressed-distorted responses on the Cognitive Distortion Questionnaire (CDQ). Hence, people high in social anxiety appear to distort cognitively in ways similar to depressives. In terms of social avoidance and distress, these findings were maintained even after depression and trait anxiety levels were covaried out. The pattern of results using the fear of negative evaluation measure, however, was not as straightforward as the social avoidance and distress measure in terms of depressed-distorted responses. Although subjects higher in fear of negative evaluation did report a greater percentage of depressed-distorted responses than subjects lower in fear of negative evaluation, these results were no longer significant once depression and trait anxiety were covaried out (even though neither covariate was significant). This FNE main effect may have disappeared in the ANCOVA because trait anxiety was highly correlated

with the FNE measure. Regardless of SAD or FNE level, nondepressed-nondistorted responses were the most common for all groups. Overall, though, the results of the present study suggest that cognitive distortions which had been previously addressed almost exclusively in relation to depression seem also to operate in the socially anxious individual.

As indicated above, the pattern of results using the FNE scale was somewhat complicated. The main hypothesis was confirmed that subjects higher in fear of negative evaluation would give a significantly higher percentage of depressed-distorted responses than subjects lower in fear of negative evaluation. However, the follow-up analyses of the significant main effect of FNE found in the ANCOVA failed to reveal any significant differences even though neither of the covariates (depression and trait anxiety) reached significance. However, trait anxiety did approach significance in this case and perhaps accounts to some extent for the lack of significance among FNE levels in depressed-distorted responses. In an attempt to clarify the interpretation of these results, correlations were calculated among the SAD, FNE, BDI, and trait anxiety measure. Trait anxiety was found to be highly correlated with the FNE ($r = .564$). Therefore, a large portion of the effects of fear

of negative evaluation was due to trait anxiety. Another possible explanation for the lack of significance in the simple effects analyses in this ANCOVA is the relatively high amount of variance in the FNE condition which affects greatly the statistical calculations of pairwise differences. Despite the nonsignificant follow-up analyses, though, the pattern of FNE group means follows the same pattern of results found with the ANOVA, in which high FNE subjects reported more depressed-distorted responses than medium or low FNE subjects.

Interestingly, with regard to depressed-distorted responses, significant differences were obtained between the high versus medium and low social anxiety conditions but not between the medium versus low social anxiety conditions. With regard to SAD and FNE scores, the subjects in our study approximated the means and standard deviations found by Watson and Friend (1969) in their college student sample. In addition, the identifications of subjects in our investigation as high, medium, or low in social anxiety seem to be similar to those used in other social anxiety research (e.g., Halford & Foddy, 1982). Our study's finding suggests that there is a significant quantitative if not qualitative difference between people who experience high degrees of social anxiety as compared to people who experience more

moderate or low levels of social anxiety. It appears that the highly socially anxious individual engages in more depressogenic-type cognitive distortion than either the moderately or low socially anxious individual.

The present study addressed three types of situations in which social anxiety may or may not occur: (1) interpersonal situations (e.g., a male-female relationship), (2) achievement situations with a major interpersonal component (e.g., running for president of an organization), and (3) achievement situations without a major interpersonal component (e.g., receiving LSAT scores in the mail). It was predicted that depressogenic cognitive distortion effects would be found for people higher in social anxiety in the first two conditions which both involve some interpersonal component, but not in the third condition in which the social component is less prominent. This predicted interaction was not found. Across all three types of scenarios, subjects higher in social anxiety and distress reported more depressed-distorted responses than subjects moderate or low in social anxiety. Even though the covariates of depression and trait anxiety were not significant in this analysis, their inclusion in the ANCOVA resulted in the same pattern of depressed-distorted responses in the interpersonal scenarios and the achievement scenarios but

not in the interpersonal-achievement scenarios. It is unclear why this pattern did not hold for the scenarios with an interpersonal-achievement theme, especially given such results were found in the stories with an interpersonal theme and with an achievement theme. Nevertheless, even in situations which presumably did not have an interpersonal component, highly socially anxious subjects demonstrated greater depressogenic cognitive distortion than moderately or low socially anxious subjects. It may be that the "achievement-only" scenarios developed for this study actually do have a component of anticipated social interaction. For example, getting test scores in the mail does not involve social interaction at the moment when one opens the envelope. However, one may anticipate other people asking about how she or he performed on the test. Hence, as long as there is even the potential for a future social interaction, people who experience high degrees of social anxiety may be prone to a depressive-type of cognitive distortion. Given the social nature of human existence, this tendency is potentially very problematic in many areas of the highly socially anxious person's life. Future research could look at socially anxious people's cognitive operations in social situations as well as situations without any immediate or anticipated

social interaction.

In terms of distortion which is nondepressive in quality (i.e., nondepressed-distorted responses in this study), only subjects who were low or medium in social avoidance and distress gave more nondepressed-distorted responses in interpersonal or interpersonal-achievement scenarios as compared to achievement scenarios. It may be that the nondepressed-distorted response (e.g., "When you first heard you'd lost [the election for president of the organization], you shrug it off as unimportant") represents a sort of self-serving bias. That is, most normal people (i.e., low or moderately socially anxious people) may engage in "ego-defensive" strategies to protect their self-images when confronted with interpersonally-involved failure situations. Again, because our world is so highly social, such a self-protective tendency would prove valuable. Based on the data in this study, it would appear that highly socially anxious people fail to engage in these self-protective, albeit biasing, operations. This tendency to distort in a more self-serving direction has also been found to occur in the attributional styles of nondepressives (e.g., Johnson, Petzel, Zarantonello, & Johnson, 1985).

In terms of nondistorted responses (depressed-nondistorted, nondepressed-nondistorted), subjects,

regardless of level of social anxiety or fear of negative evaluation, responded differently to the three scenario themes. More depressed-nondistorted responses were given in achievement scenarios than either interpersonal or interpersonal-achievement scenarios, whereas more nondepressed-nondistorted responses were given in interpersonal and interpersonal-achievement scenarios than in achievement scenarios. For many people, failure situations which occur without an immediate interpersonal component seem to be responded to with depressed feelings.

Although level of depression and trait anxiety were employed as covariates in this study, they frequently failed to reach significance in the analyses of covariance. Trait anxiety was more often a significant covariate than depression, suggesting that social anxiety is related more to general anxiety than to depression. Correlations among the SAD, FNE, BDI, and trait anxiety measures gives credence to this interpretation. Trait anxiety was more highly correlated with both the SAD ($r = .554$) and the FNE ($r = .564$) than depression was correlated with either the SAD ($r = .416$) or the FNE ($r = .291$). Given this study's findings that socially anxious people cognitively distort information in much the same way that depressed people do, it is somewhat

surprising that depression was not found to play a greater role in social anxiety. Further, given the relationship between social anxiety and trait anxiety as well as the relationship between depressogenic cognitive distortion and social anxiety, it might be interesting to look at whether depressive cognitive distortion also occurs in people with more general trait anxiety. Indeed, our study found a high correlation between depression and trait anxiety ($r = .588$).

What are the implications of the present study for our understanding of the phenomenon of social anxiety? Essentially, our data suggest that highly socially anxious persons tend to distort information in ways similar to depressed persons. The findings of the present investigation fit with Beck's cognitive model of psychopathology, often discussed in terms of depression but also in reference to anxiety or paranoid states (Beck, 1970). Whereas Krantz and Hammen (1979) suggested that "persons who are depressed are unique in their selective use of certain types of errors [arbitrary inference, selective abstraction, overgeneralization, and maximization of negative or minimization of positive]...in the interpretation of information...as described by Beck" (p. 618), the present findings argue for the existence of these cognitive errors, i.e.,

depressive-distortion in Krantz and Hammen's terms, as operative in social anxiety and therefore not unique to depression.

With regard to this issue of specificity of cognitive distortions in different disorders, Beck and his associates (Beck, 1976; Beck, Brown, Steer, Eidelson, & Riskind, 1987; Beck & Emery, 1985) have argued for differentiating anxiety and depression in terms of cognitive content specific to each type of disorder. This approach has been called the content-specificity hypothesis of the cognitive model of psychopathology. This hypothesis suggests that the cognitive content (including automatic thoughts, interpretations, and imagery) of the anxious person is centered around the theme of danger, physical or psychosocial threat, and anticipated future harm. The depressed person's cognitive content, on the other hand, is characterized by the theme of negative attitudes about the past and future as well as self-deprecation. Although these two types of cognitive content may be relatively easily distinguished in some cases, it may not always be possible to classify a particular thought as reflecting more of a "depressive" theme or an "anxious" theme. For example, an item from the Cognition Checklist (CCL), which was developed in order to assess the frequency of

automatic thoughts relevant to anxiety and depression, demonstrates this apparent overlap in depressive versus anxiety themes: "There's something very wrong with me" (Beck, Brown, Steer, Eidelson, & Riskind, 1987). Such a self-statement seems to reflect not only the "depressive" theme of failure but also the "anxiety" theme of danger. Indeed, there is a substantial correlation between the anxiety and the depression subscales of the CCL (Beck, Brown, Steer, Eidelson, & Riskind, 1987). Although this measure does not directly address social anxiety, it is implied that social anxiety would have a cognitive content theme similar to that for general anxiety but more specific to anticipating harm in social situations. Yet, our data indicate that socially anxious people seem to share with depressives the tendency toward more self-deprecating cognitions. A number of different explanations could be offered here. It may be that social anxiety, as a "disorder," falls between depression and general anxiety in terms of cognitive content. Or, perhaps the distinction between anxiety-specific and depression-specific cognitive content is not as clear as previously thought. It could also be that the CDQ used in this study, a measure designed to assess depressive cognitive distortions, may include cognitive statements representative of "anxiety"

as well as "depression" themes. For example, the CDQ depressed-distorted response of "when you first heard you'd lost [the election], you immediately feel bad and imagine I've lost by a landslide" seems to exemplify an "anxious" theme of harm (i.e., imagining being "crushed" and rejected as a candidate) as well as a "depressive" theme of failure and loss. Future studies might employ the CCL with socially anxious subjects in order to assess further the cognitive content-specificity hypothesis.

Based on the present results, it seems likely that less socially anxious people also distort information but in a more positively-biasing direction. Conversely, the more socially anxious person evidently distorts information in a negative, self-deprecating direction. These results may be understood within the context of Schlenker and Leary's (1982) self-presentational model of social anxiety, as depressogenic cognitive distortion may serve as a self-handicapping strategy. The socially anxious person may "assume the worst" as a strategy to avoid greater social embarrassment by making the mistake of not being aware of an apparent failure. In some sense, it may be that different "self-protective" strategies are employed by people who are lower versus higher in social anxiety. Less socially anxious individuals tend toward what we could call "positive-

biasing," whereas more socially anxious individuals tend toward "negative-biasing."

With regard to implications for therapeutic intervention with socially anxious individuals, the present investigation provides indirect support for the use of cognitive-based approaches. Given the evidence of cognitive distortion of information found to occur in socially anxious people, it is suggested that treatment should in some way address the cognitive errors discussed by Beck (1970) and represented in the cognitive distortion measure used in our study. Based on our findings regarding the similarity in cognitive bias between highly socially and depressed individuals, treatment approaches which have been successful in modifying the distorted cognitions of depressives could also be effective with the socially anxious. Recently, Butler (1989) has discussed a cognitive approach, which has been developed from work with depression, to treating social anxiety. This approach is largely geared toward counteracting cognitive biases affecting the past, present, and future. The cognitive therapeutic method of rational restructuring, which teaches the client to reevaluate more realistically the consequences of his or her behavior in different situations, has been shown to be a useful approach in reducing social anxiety (see

Glass & Shea, 1986, for a review of clinical outcome research for social anxiety), likely because the client learns to counteract his or her tendency to interpret events in a negative, self-deprecating way.

Although our investigation has implications for the cognitive treatment of social anxiety, it is crucial to include a behavioral component in this type of therapeutic program. It is essential for the client to test his or her "new" style of thinking in practice (Butler, 1989). Hence, the present study provides inferential support for modeling social anxiety treatment approaches from depression treatment approaches (see Beck, Rush, Shaw, & Emery, 1979, cited in Butler, 1989). As with other problems, treatment strategies for the socially anxious should be tailored to the individual's specific difficulties (Leary, 1983a). It may be that clinicians give a battery of diagnostic tests, including a measure of cognitive distortion, in order to develop an individualized treatment program.

In addition to the ideas for further research already proposed above, future studies could address the socially anxious person's development of the patterns of cognitive distortion evidenced by the present study. It would also be important to investigate whether this cognitive distortion is maintained over time. Certainly, efforts

to ascertain the initial development of cognitive distortion in social anxiety would prove valuable in treatment and prevention of this distressing experience. Though our investigation did include different types of situations that might result in social anxiety for some individuals, further research could assess various shyness-eliciting situations in an effort to identify specific situational characteristics that are associated with high social anxiety. Another relevant research project might look at the interaction between individual differences and situational factors. Additionally, investigations of the cognitions (and possible cognitive distortions) of consistently socially anxious versus variably socially anxious individuals would be important to address (see Russell, Cutrona, & Jones, 1986, for a discussion of self-perceived consistency versus variability). Experimental manipulation, correlational, or perhaps even observational data may be used in future research in this area.

In conclusion, the aim of the present study was to determine if cognitive distortions traditionally viewed as pertinent to depression may also be relevant to understanding social anxiety. Results supported the primary prediction that more highly socially anxious subjects give more depressed-distorted responses than

less socially anxious subjects. Thus, more highly socially anxious individuals tend to interpret events in negative, pessimistic, and self-deprecating ways. Furthermore, these cognitive distortions cannot simply be explained by the fact that socially anxious subjects tend, as a group, to be more depressed than nonsocially anxious subject, as our results were not altered by covarying out depression level. Given these findings, there are important therapeutic implications for the understanding and treatment of highly socially anxious people.

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APPENDIX

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Cognitive Distortion Questionnaire (male form)

Instructions: Carefully read each of the following scenarios putting yourself in the place of the main character in each scenario. Then answer the questions following each scenario on the answer sheet provided.

Paul had joined a particular organization a couple of years ago because he was very committed to its goals and practices. He knew most of the members by now, and a few had even become fairly close friends. Paul had been fairly active but had never really stood out. Several friends in his current group thought that his ideas were sound and they began to urge him to run for president of the organization in the upcoming election. Paul was very reluctant at first, feeling he was unqualified, but finally he decided to run because he thought he did have energy and ideas to contribute. No man had ever held the position before, but his friends thought he had a good chance to win. When elections were held, Paul ran for presidency but he lost.

Put yourself in Paul's place, trying as vividly as you can to imagine what he probably thought and felt.

1. When you first heard you'd lost, you immediately:
 - a. feel bad and imagine I've lost by a landslide.
 - b. shrug it off as unimportant
 - c. feel sad and wonder what the total counts were.
 - d. shrug it off, feeling I've tried as hard as I could.

2. After the election you conclude.
 - a. I feel really depressed about losing, but I'll continue to work for my goals once I get my enthusiasm back.
 - b. It's okay that I lost, since it is a useful illustration of the inevitable prejudice against male leadership.
 - e. I'm not a winner at anything. I never should have let myself be talked into running.
 - d. The campaign was a good experience even though I didn't win.

3. When you compare the winner's "platform" to yours, you think:
 - a. Mine was good for a first attempt, and was vastly better than my opponents.
 - b. Despite what my friends said, mine wasn't good at all.
 - c. I feel badly that I didn't do a better job on it, but I'll know next time.
 - d. Mine showed some inexperience but was pretty good for a first attempt.

John is a senior at a large university. He dislikes the lack of faculty-student contact, so he usually makes an effort to talk to his teachers outside the classroom. So after he received an average score on a midterm, he went to the professor, Dr. Smith, to talk over the test. Dr. Smith pointed out the correct answers and the reasons for them on the questions he missed. She also gave him some helpful tips on studying. After about 45 minutes, Dr. Smith said she was quite busy and hoped he would excuse her. She then walked John to the door and said it was nice talking to him.

Put yourself in John's place, trying to imagine as vividly as you can what he probably thought and felt.

4. Are you satisfied with your meeting with Dr. Smith?
 - a. Yes, because she was quite pleased with my visit and will probably give me a good grade in the course.
 - b. Although it's upsetting for me to realize it, I probably need tips on studying.
 - c. Yes, she answered all my questions and I made a good contact.
 - d. No, she probably thinks I'm dumb, which is why she gave me tips on study habits.

5. Looking over the questions you missed, you decide:
 - a. It's not my fault, the teacher should make a better test.
 - b. Unfortunately, my performance on this test is indicative of my true ability. I'm a mediocre student.
 - c. I feel bad that I missed those questions.
 - d. Now that I've talked to the teacher, I hope I'll do better on the final.

6. You thought Dr. Smith was rather nice in walking you to the door. Your reaction to her gesture was:
 - a. Embarrassment. She was trying to hurry me out.
 - b. Appreciation that she realized that it was worth her time to help me.
 - c. Appreciation - She seemed interested and concerned.
 - d. Sort of sad and let down that the meeting had to end.

7. How did your meeting with the professor change your view of the large, impersonal, university?
 - a. Dr. Smith helped to make the university seem less impersonal.
 - b. I realize that the faculty is always happy to talk with students.
 - c. Although Dr. Smith was willing to talk to me, I still feel lost and a little lonely at the large, impersonal university.
 - d. Even though the professor was polite, I still felt that she resented my taking up so much of her time, and that made me feel bad.

Lisa and Jason have been dating for the past few months. Lisa is neither pretty nor ugly and has a pleasant personality. Jason is usually fun to be with and often takes her to nice restaurants and theaters. Tonight she seemed to be unhappy despite his attempts to start light-hearted conversations. He asked her if anything was wrong. She replied that she was having some problems at work that she didn't want to talk about, but was grateful for his concern. She seemed a little more cheerful after that.

Put yourself in Jason's place, trying to imagine as vividly as you can what he probably thought and felt.

8. You think about the future of this relationship and you imagine:
 - a. It's a pretty good relationship, and we're getting to know each other as time goes on.
 - b. It's a pretty good relationship and I'm generally satisfied although I think the relationship has a few problems.
 - c. I would probably have a hard time finding someone else who would care about me, so I want to make this relationship work out.
 - d. It is not what I really want it to be, and that makes me sad, so I will leave myself open to contacts with other women.
9. You wonder why Lisa hasn't called for several days.
 - a. I decide I don't really know what and figure I should ask her.
 - b. All I can think of is that she must not care about me.
 - c. I imagine that she thinks so highly of me that she sometimes is afraid of risking rejection or pushing me too hard.
 - d. I feel unhappy about it but figure that things sometimes do not happen exactly the way one would like.
10. Why do you think her mood changed after you asked her if there was a problem?
 - a. I feel pleased and imagine I can be very therapeutic for her and most others.
 - b. I don't know why since it may have been due to any number of things, but I am happy that her mood changed.
 - c. I just don't understand her moods, which worries and upsets me even though I know it's very hard to really understand another person.
 - d. I wish I could believe that I had something to do with it, but I rarely have the ability to cheer anyone up.

11. You wonder why she got in the bad mood, and imagine that:
- a. I feel badly that I don't understand her, but it's really difficult to understand everything about somebody else.
 - b. like most people, she has a few problems that bother her.
 - c. It's because she is extremely immature and moody; but I, on the other hand, am calm and happy.
 - d. It's because she's dating the most bleak, plain man in the city.

Len is a sophomore, living in one of the dorms. He's moderately good looking, friendly, a bit on the quiet side, an A student. He frequently admires men of his age who appear to be outgoing, although he's aware of the disadvantages of that personality as well. One of his concerns is making friends. In his freshman year he kept busy with school work and maintained relationships he'd had in high school. But this year he has become more aware that he wants to meet people and make friends on campus. He's uncertain quite how to go about it.

Tonight is Friday night, and Len can't deny to himself that he feels lonely. Most of the men on his floor are out for the evening or gone for the weekend. At the far end of the hall the men in two or three rooms are in tonight as well. While he's in the shower, he hears one of them mention plans for going out later for pizza to a place where they know women are going to be.

Put yourself in Len's place and try to imagine as vividly as you can how he might think and feel.

12. Your first reaction when you hear that they are going out is:
 - a. Unhappiness. They probably would have asked me to come if they liked me more.
 - b. Unhappiness and increased loneliness. Sounds like I'll be practically alone on the floor.
 - c. I wonder if they'd mind if I'd come along.
 - d. Relief. They seem unfriendly for not asking me, so I'm happy since I don't have to be with them.
13. Being alone on a Friday night:
 - a. doesn't bother me because I figure I'll have a date next weekend for sure.
 - b. upsets me and makes me feel lonely.
 - c. upsets me and makes me start to imagine endless days and nights by myself.
 - d. I can handle it because one Friday night alone isn't that important; probably everybody has spent one night alone.
14. You sit at your desk trying to get some reading done. Your mind keeps flashing on:
 - a. pleasant memories of a recent date you've had.
 - b. an upcoming blind date which you expect will go very well.
 - c. I'm lonely and down but everybody is lonely once in a while.
 - d. the feeling that not having a date tonight is one of the most painful things I can imagine.

15. People have always told you that you have a nice smile. You're thinking about your looks now and feel:
- a. it's unimportant what people think about my looks or anyone else's looks.
 - b. fairly satisfied about my looks.
 - c. really ugly and undesirable. When someone compliments my looks I think they're just being polite.
 - d. unhappy because even though I feel fairly good looking it didn't seem to be an asset in getting a date tonight.

Mark has been working on getting into better physical shape. He bought an exercise book that set out a detailed six-month program that included specific goals for each month, taking into account his age and other factors. He's been following the program pretty closely for the past month. He's worked particularly hard at decreasing his time for his one-mile run. Four days a week, he has been getting up before work to run, trying to keep up with the goals set up in his exercise book. Although he has improved his time, he has not been able to keep up with the goals in the book.

Put yourself in Mark's place, trying to imagine as vividly as you can what he probably thought and felt.

16. When you think about the time you put into your exercise program during the past month, you feel:
 - a. I didn't put as much effort in as I should have, because I lack the necessary self-discipline, and that makes me feel bad.
 - b. Even if running has never been my best sport, it still really bothers me that I couldn't keep up with the program's goals.
 - c. I put in a reasonable amount of time and effort, and I feel good about that.
 - d. I spent too much time trying to follow this unreasonable exercise program.

17. When you think about the physical shape you're in now, you think:
 - a. Since I didn't keep up with the program's goals, I'm really not in any better shape than a month ago, and I'm feeling frustrated and hopeless about ever getting into good physical shape.
 - b. I'm in better shape than a month ago, and the improvement pleases me.
 - c. I'm really disappointed that I'm not in the shape that I should be at this point, but at least I'm doing a little better than a month ago.
 - d. I'm in good shape now; the goals in the book are absurd.

18. Your thoughts about continuing with this exercise program are:
- a. I feel good about this program, and I think I'll continue with it for the full six months.
 - b. I'm pretty down on myself for not being able to keep up with the program's goals for the first month; I certainly will never be able to keep up for the rest of it.
 - c. I don't need to continue with this exercise program, because I've made some improvements already.
 - d. I'm really disappointed in myself for not keeping up with the program's goals in the first month, but I still want to get in shape, so I think I'll continue with the program.

Fred had started working in the main office last week. It felt like it had taken forever to find this job after he moved to Chicago. He had grown up in a small town some distance, and since he moved had met few people. The others who worked in the same office seemed friendly, although most of them were considerably older than he. One woman, Carolyn, was about his age, sort of pretty, but she worked down the hall and he saw her only occasionally. Taking his coffee break in the snack bar one afternoon, she came over and sat with him. They talked for awhile. He found her fun and pleasant, and they seemed to enjoy each other. The break ended and he had to get back to his office. He found himself thinking about her that afternoon—fantasizing about going out with her, wondering what she's like. He looked forward to seeing her the next day. At lunch the next afternoon, he sat alone in the snack bar and saw her come in. She saw him, smiled and waved, but she took her lunch to another empty table on the far side of the room.

Put yourself in Fred's place and try to imagine as vividly as you can what he might think and feel.

19. Your first reaction was to think:
 - a. I might consider being a little assertive and pursue her.
 - b. I'm unhappy that she prefers to eat alone this afternoon.
 - c. she dislikes me and wants me to get the message.
 - d. she's playing hard to get.

20. Seeing her makes you think of your romantic prospects in Chicago, you imagine:
 - a. I get really discouraged about how hard it is to meet good people, but almost everyone has problems with it too.
 - b. I feel like I'll never meet anyone who is interested in me.
 - c. I can't expect the first woman to come along to be the Big Romance.
 - d. Women in Chicago are awfully conceited.

21. Thinking back on your conversation with Carolyn, your judgement is:
 - a. I know he really was excited by me and I'm mystified about why he's avoiding me.
 - b. I'm afraid it wasn't as interesting as I first thought.
 - c. The conversation was pleasant; that probably had nothing to do with whether she interested in me or not.
 - d. I must have failed at making a good impression.

22. Reflecting on your life here in Chicago, you think:
- a. I'll just have to wait and see what the future will bring; it's too soon to tell.
 - b. I have just about everything I want and I know I'll be a big hit in this town.
 - c. Loneliness is a big problem for me, but then I suppose it's also a problem for all newcomers.
 - d. No one in Chicago will ever really care about me, but at least I have a job.

Pete is a sophomore in college with an A-/B+ average. He has declared his major in business and is presently taking a microeconomics class as part of the required courses for his major. Last week, he took his midterm in microeconomics, an exam which counts for half of his grade. His professor told the class she would post their midterm grades on the classroom door, using each student's social security number instead of name. Pete goes to his classroom door to find out how he had done on his midterm. After locating his social security number on the posted sheet, he finds that he got a C-.

Put yourself in Pete's place, trying as vividly as you can to imagine what he probably thought and felt.

23. When you first saw your midterm grade, you thought:
- This grade is so bad, I'm really not smart enough for this class.
 - I didn't do well, because it was a very poorly designed exam.
 - I feel pretty depressed about this grade; I wonder which ones I got wrong.
 - I tried my best on this exam, and I'll try to do better on the next one.
24. When you think about your major in business, you think:
- Microeconomics is only one class; I'm sure I'll ace all of the other business courses.
 - This midterm grade has really brought me down and indicates to me that I should probably change my major.
 - My performance in this class so far really bothers me, but it doesn't mean I won't be a good business major.
 - I'll have to work harder in my other business classes in order to make up for this class.
25. When you think about finishing up the rest of your microeconomics class, you decide:
- I'll have to work extra hard in the rest of this course, because I really want to do well.
 - The teacher really isn't very good, so why work hard.
 - I'll never be able to get a.
 - It really upsets me that I probably won't get as good a grade as I'd like, but at least I'm learning something.

Ed was a graduate student, and he aspired to be a good teacher. It was very important to him to communicate well with others, and he liked the idea of turning students on to particular viewpoints that they may never have considered before. His father had been a professor in a small college and although their relationship was strained at times, he had always respected his father and thought that being a professor was a good life. Ed was a sensitive person-perceptive and insightful and he was aware that part of his motivation stemmed from the role of being an "expert" and having people be impressed by his knowledge.

An opportunity to test his teaching skills arrived in the form of a class presentation that all the students in one of his seminars were required to make. Ed probably put in a bit more than average preparation on his topic. When the day came for his presentation, he seemed calm and poised (although rather nervous on the inside). During his talk, students commented and asked questions; no one yawned or dozed. One question had been rather hard to answer. No one said anything to him afterwards since it was late in the day, everyone left immediately afterward.

Put yourself in Ed's place and try to imagine as vividly as you can what he probably thought and felt.

26. You try to judge how well your talk went. You decide:
- I clearly did the best job of anyone.
 - According to my standards, I think it went okay.
 - I'm disappointed that no one complimented me.
 - I hoped someone would tell me it went well, but since no one said anything, I'm afraid it wasn't very good.
27. When you thought about it afterwards, the thing that mostly comes to mind is:
- I feel good; relieved that the whole thing is over.
 - I feel disappointed that I didn't get feedback about how I'd done
 - I feel bad about the one question I didn't answer. I think it made me look ridiculous.
 - I feel good because now the teacher will see my genius.
28. You're wondering what grade you might be given for the presentation by the instructor.
- I feel that because of the one question that stumped me, he'll conclude that I didn't really prepare well enough to earn an A.
 - I saw him nod once or twice, so he was really impressed and I'll get an A.
 - I'm quite worried about the grade but I don't know how he'll grade.
 - I think I'll get an A because it's a graduate seminar and because I clearly did as much as anyone else and an A is usual under these circumstances.

29. With respect to your future career as a college teacher, you conclude:
- a. I'm afraid I won't make it because I know the competition for jobs is stiff.
 - b. I'm optimistic because I've always been lucky.
 - c. Since my seminar presentation didn't go very well, I feel pretty pessimistic about my chances.
 - d. I'm optimistic since my grades are good.

Tom is a junior in college and has for the last couple of years considered going to law school after he graduates. So, several weeks ago, he decided to take the required entrance exam, the Law School Admissions Test (LSAT). He knew how important it was to score well on the LSAT in order to get into a good law school. Yesterday, he received his LSAT scores in the mail, and he scored lower than he had expected.

Put yourself in Tom's place, trying to imagine as vividly as you can what he probably thought and felt.

- 30 . When you first read that your scores weren't as high as you expected, you:
- feel very disappointed, but decide you tried your best.
 - decide your scores really were pretty good after all.
 - decide you had done okay according to your standards.
 - feel very disappointed and think it confirms that you're not very smart.
- 31 . The next day, after you've had awhile to think about it, you decide:
- It's okay that my scores weren't that high since these tests are ridiculous to begin with.
 - I'll never be a successful lawyer.
 - It was a good experience for me to take this test even if I didn't score as well as I wanted.
 - I'm really depressed about my scores, but I still think I could be a good lawyer.
- 32 . When you think about applying to law schools, you think:
- There's no point in wasting my time applying to law schools. There's no way any of them will accept me with these LSAT scores.
 - Although it makes me sad to think that my LSAT scores aren't good enough for me to get into a top law school, I think I'll apply to some other law schools, even if they aren't the best ones.
 - I'm not too concerned. My LSAT scores don't really matter that much, because I've had a lot of related job experience.
 - I'll apply to schools that have accepted people with LSAT scores close to mine.

Cognitive Distortion Questionnaire

Scoring Key

C. Harman & S. Krantz

DD = depressed, distorted

NDD = nondepressed, distorted

DND = depressed, nondistorted

NDND = nondepressed, nondistorted

I. Paul/Peggy (Interpersonal - Achievement)

1. a. DD
b. NDD
c. DND
d. NDND

2. a. DND
b. NDD
c. DD
d. NDND

3. a. NDD
b. DD
c. DND
d. NDND

II. Lisa/Jason (Interpersonal)

4. a. NDD
b. NDND
c. DD
d. DND

9. a. NDND
b. DD
c. NDD
d. DND

10. a. NDD
b. NDND
c. DND
d. DD

11. a. DND
b. NDND
c. NDD
d. DD

III. Carl/Carolyn/and (Interpersonal)

19. a. NDND
b. DND
c. DD
d. NDD

20. a. DND
b. DD
c. NDND
d. HDD

21. a. NDD
b. DND
c. NDND
d. DD

22. a. NDND
b. NDD
c. DND
d. DD

IV. John/Janice (Interpersonal - Achievement)

4. a. NDD
b. DND
c. NDND
d. DD

5. a. NDD
b. DD
c. DND
d. NDND

6. a. DD
b. NDD
c. NDND
d. DND

7. a. NDND
b. NDD
c. DND
d. DD

V. Len/Louise (Interpersonal)

12. a. DD
b. DND
c. NDND
d. NDD

13. a. NDD
b. DND
c. DD
d. NDND

14. a. NDND
b. NDD
c. DND
d. DD

15. a. NDD
b. NDND
c. DD
d. DND

VI. Ed/Ellen (Interpersonal - Achievement)

26. a. NDD
b. NDND
c. DND
d. DD

27. a. NDND
b. DND
c. DD
d. NDD

28. a. DD
b. NDD
c. DND
d. NDND

29. a. DND
b. NDD
c. DD
d. NDND

SCORING KEY FOR
COGNITIVE DISTORTION QUESTIONNAIRE ADDENDUM

Code: Dep-Dis = Depressed-Distorted Response
Dep-Ndis = Depressed-Nondistorted Response
Ndep-Dis = Nondepressed-Distorted Response
Ndep-Ndis = Nondepressed-Nondistorted Response

16. a. Dep-Dis MARK/MOLLY (Achievement)
b. Dep-Ndis
c. Ndep-Ndis
d. Ndep-Dis
17. a. Dep-Dis
b. Ndep-Ndis
c. Dep-Ndis
d. Ndep-Dis
18. a. Ndep-Ndis
b. Dep-Dis
c. Ndep-Dis
d. Dep-Ndis
23. a. Dep-Dis PETE/PAM (Achievement)
b. Ndep-Dis
c. Dep-Ndis
d. Ndep-Ndis
24. a. Ndep-Dis
b. Dep-Dis
c. Dep-Ndis
d. Ndep-Ndis
25. a. Ndep-Ndis
b. Ndep-Dis
c. Dep-Dis
d. Dep-Ndis
30. a. Dep-Ndis TOM/TRACEY (Achievement)
b. Ndep-Dis
c. Ndep-Ndis
d. Dep-Dis

- 31.
 - a. Ndep-Dis
 - b. Dep-Dis
 - c. Ndep-Ndis
 - d. Dep-Ndis

- 32.
 - a. Dep-Dis
 - b. Dep-Ndis
 - c. Ndep-Dis
 - d. Ndep-Ndis

Note: All questions labelled "Interpersonal" and "Interpersonal-Achievement" are part of the original Cognitive Distortion Questionnaire (Krantz & Hammen, 1979), and the questions labelled "Achievement" were developed for this study.

APPROVAL SHEET

The thesis submitted by Kelly A. Johnson has been read and approved by the following committee:

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

The thesis is therefore accepted in partial fulfillment of the requirements for the degree of Master of Arts.

5-11-89
Date


Director's Signature