

## **Perceptions of Control in Panic Disorder and Social Phobia<sup>1</sup>**

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*Levenson's (1973) locus of control scale was used to assess perceptions of control in individuals with panic disorder and social phobia, compared to a nonclinical sample. Both anxiety disorder groups showed a lower sense of internal control compared to the normal sample. Furthermore, the two anxiety disorder groups showed contrasting externality orientations. Panic-disordered individuals viewed events as proceeding in a random and uncontrollable way, while social phobics viewed events as controlled by powerful others. Partial correlations confirmed the unique relationship between each disorder and a particular externality orientation and indicated that low internal perceptions of control were strongly influenced by the presence of beliefs in chance and powerful others. These data suggest that perceptions of diminished control may be an affective-cognitive theme of anxiety, and that specific types of control perceptions are uniquely associated with these particular anxiety disorders.*

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Individuals who experience a lack or loss of control over their actions and environment are vulnerable to depression (see Abramson, Seligman, & Teasdale, 1978; Peterson & Seligman, 1984). A sense of diminished control, however, may also dominate the experience of individuals with anxiety disorders (Barlow, 1988; Beck & Emery, 1985; Lazarus & Averill, 1972). Suggestions concerning the importance of perceived lack of control in anxiety actually preceded the consideration of its relation to depression (e.g., Mandler, 1972; Mowrer & Vick, 1948). However, the development of the learned helplessness paradigm and its application to the study of depressive phenomena shifted the focus away from the relationship between anxiety and the experience of control (see Barlow, 1988; Mineka and Kelly, 1989).

Early research with normal populations found consistent relationships between perceived control and anxiety. For example, individuals with lesser internal control reported higher levels of anxiety than those with greater internal control (Ray & Katahn, 1968; Watson, 1967). Modest associations between locus of control and a variety of social anxiety measures have also been reported (Betts, 1982; Mikawa, Nordin, & Eyman, 1986). In addition, experimental studies in which perceptions of control were manipulated produced a differential impact on anxiety depending on subjects' locus of control orientation (Houston, 1972; Watson & Bauml, 1967).

Findings related to clinical populations have been somewhat ambiguous. While greater external locus of control has been associated with increased social and phobic anxiety among normal student populations and agoraphobics (Emmelkamp & Cohen-Kettenis, 1975), there have been mixed findings concerning whether agoraphobics score about the same as (see Michelson, Mavissakalian & Meminger, 1983) or higher than (Adler & Price, 1985) normal populations on externality.

The purpose of this study was to evaluate perceived locus of control among individuals with clinical anxiety, both panic disorder and social phobia, in comparison to normal controls. Based on the evidence in the normal population studies, it was hypothesized that individuals with anxiety disorders would have a poorer sense of internal control compared to normal subjects. It was also hypothesized that individuals with panic disorder and social phobia would differentiate themselves by the nature of their perceptions of lack of control. This hypothesis was generated from two different types of observations. First, clinical reports of the cognitive features associated with each disorder seem to suggest differing types of "uncontrollability" perceptions (Heimberg, 1990; Hibbert, 1984). Second, recent experimental evidence indicates differential attentional biases to specific types of threat relevant words, with panic-disordered individuals showing a bias towards physical threat words (e.g., disease, illness) and social pho-

bics showing a bias towards social threat words (e.g., criticized, inferior) (Hope, Rapee, Heimberg, & Dombeck, 1990).

Panic attacks are experienced as the sudden and occasionally spontaneous onset of marked physiological arousal, often associated with thoughts of impending doom, physical injury, or loss of control (Hibbert, 1984). The predominating themes in the experience of the panic attack seem to be sudden change in physical state, difficulty in predicting the occurrence of an attack, and a general sense of loss of control (Sanderson, Rapee, & Barlow, 1987). Social phobic individuals report that the anxiety experienced during a social situation is associated with fear of being observed and critically evaluated by others (Heimberg, 1990). Many of the cognitions reported by social phobics suggest a belief that observation by others will result in being humiliated, disliked, or thought worthless, pathetic, or stupid (Heimberg, 1990).

Levenson (1973, 1981) proposed a multidimensional conceptualization of controllability beliefs, which identified one dimension of internality (sense of mastery) and differentiated between two externality dimensions: (1) *chance*—a belief in the random nature of events—and (2) *powerful others*—a belief that powerful others control the outcome of events. These two externality orientations seem to describe the contrasting perceptions which predominate in the experience of panic disorder and social phobia. For individuals with panic disorder, the experience of an attack as occurring “out of the blue” and the sudden onset of symptoms and change in state may be experienced as random or reinforce a belief in the random and unpredictable nature of events. Individuals with social phobia, in contrast, are overly concerned with and fearful of the evaluation of others and may shape their behavior to conform with or meet the expectations of others. Such a view suggests a perception of others as critically important.

Levenson's (1973) locus of control scale provides an apt measure for assessing a sense of mastery or internal control for the anxiety disorders and for investigating controllability perceptions that might be specific to each disorder. It was expected that, compared to normal controls, both social phobics and panic-disordered individuals would show low perceptions of internal control but that the panic-disordered subjects would more strongly endorse “chance” beliefs, while social phobics would more strongly endorse “powerful others” beliefs.

## METHOD

### *Subjects*

The participants in the study were 14 individuals diagnosed with panic disorder, 14 individuals with social phobia, and 14 normal controls. There

were 4 men and 10 women in the normal control and the panic-disordered groups; the social phobia group was comprised of 6 men and 8 women. The average age of the normal control, panic-disordered, and social phobia groups was 32, 35, and 32 years, respectively. Educational status was rated on a scale from 1 (graduate/professional degree) to 5 (grades 9–11). The modal score in each group was 2 (college graduate). There were no significant group differences in gender ( $\chi^2 = 0.89$ , n.s.), age ( $F = .78$ , n.s.), or educational status ( $\chi^2 = 12.09$ , n.s.).

All anxiety disorder patients had been recruited for research treatment for their respective disorders. All individuals with an anxiety disorder met DSM-III-R (American Psychiatric Association, 1987) criteria for their respective anxiety disorder. Because of selection requirements specific to the research treatment, these individuals had no other concurrent Axis I diagnosis, including any depressive disorders or drug or alcohol abuse. Diagnosis was accomplished with the Structured Clinical Interview for DSM-III-R (SCID) (Spitzer, William, Gibbon, & First, 1987) administered by trained clinical interviewers (M.C. kappa = .83; A.G. kappa = .74). The 14 control subjects were recruited from among university staff and their acquaintances. Normal controls, evaluated with the SCID, had no current diagnosis of panic disorder, social phobia, or any other Axis I disorder. The SCID has been shown to produce reliable diagnoses when used by trained raters.

### *Procedure and Measure*

As part of their initial assessment and prior to receiving treatment, the anxiety disorder patients completed several self-report questionnaires, including the Locus of Control Scale (Levenson, 1973). The 14 control subjects completed the questionnaires prior to participation in another study (see Cloitre & Liebowitz, 1991).

The Levenson (1973) Locus of Control subscales (Internality, Chance, and Powerful Others) range in value from 8 to 48, with higher scores indicating greater endorsement. Each of the three subscales reflects a conceptually distinct construct, and factor analysis has indicated that there is no item overlap (Levenson, 1981). The Internality subscale items reflect belief in one's ability to influence events ("When I get what I want, it's usually because I worked hard for it"; "When I make plans, I am almost certain to make them work"). The Chance subscale items reflect a belief that events occur in an unordered and random way ("I have found that what is going to happen will happen"; "It's not wise for me to plan too far ahead because many things turn out to be a matter of good or bad

fortune”). The Powerful Others subscale items reflect the belief that event outcomes are determined by those with power (“Getting what I want requires pleasing those above me”; “If important people were to decide they didn’t like me, I probably wouldn’t make many friends”). All subscales have been reported to have acceptable reliability and validity (Levenson, 1981).

RESULTS

*Reliability of Scale*

Internal consistency estimates for each of the three scales in the total sample were moderately high. Cronbach’s alpha for Internality, Chance, and Powerful Others was .77, .69 and .72, respectively.

*Analyses of Variance*

A one-way multivariate analysis of variance (MANOVA) was initially conducted to compare the overall responses among the normal control, panic disorder, and social phobic groups. Using Wilks’s criterion, a significant main effect for group was obtained,  $F(6, 74) = 8.01, p < .0001$ .

As represented in Table I, subsequent univariate analyses of variance revealed a significant group effect for each of the three Levenson scales. Duncan’s Multiple-Range tests were employed to determine the presence of significant differences among pairs of means.

The main effect of group on Internality,  $F(2, 39) = 9.05, p < .001$ , reflected a significant difference between normal controls, who showed the highest average score on internality, and the two anxiety disorder groups, as well as a significant difference between the social phobic group and the panic disorder group, with the former showing higher internality. The main effect of group on Chance,  $F(2, 39) = 4.85, p < .01$ , reflected a significant difference between panickers and normal controls as well as between pan-

Table I. Group Comparison on Levenson Locus of Control Subscales<sup>a</sup>

Measures	Group					
	Normal control		Panic disorder		Social phobia	
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>
Internality	39.8 <sub>a</sub>	(5.6)	30.3 <sub>c</sub>	(7.0)	35.0 <sub>b</sub>	(4.9)
Chance	17.8 <sub>a</sub>	(2.6)	23.5 <sub>b</sub>	(7.8)	19.3 <sub>a</sub>	(2.8)
Powerful others	18.1 <sub>a</sub>	(3.7)	19.7 <sub>a</sub>	(6.3)	26.4 <sub>b</sub>	(4.6)

<sup>a</sup>Note: Means with different subscripts are significantly different according to Duncan’s Multiple-Range Test ( $p < .05$ ).

ickers and social phobics. The main effect of group on Powerful Others,  $F(2, 39) = 10.77, p < .0002$ , showed that social phobics scored significantly higher on this dimension than the normal and panic disorder groups, who did not differ from each other.

### *Correlational Analyses*

Although conceptually distinct constructs, the three subscales were moderately correlated. Internality was correlated with Chance and Powerful Others at  $-.31 (p < .01)$  and  $-.28 (p < .07)$ , respectively, while Chance and Powerful Others were correlated at  $.30 (p < .05)$ .

Thus, it seemed important to assess the strength of the relationship between the anxiety disorders and each subscale, independent of the influence of the other two subscales. Three point-biserial correlational analyses were performed examining the relationship between group membership and each subscale score, with the effects of the remaining two subscales partialled out.

The first set of correlations assessed normal control and panic disorder groups (NC/PD). Group membership was correlated with Chance ( $r = .33, p < .008$ ) and to a lesser extent with Internality ( $r = -.21, p < .07$ ). The second set of correlations, with normal controls and social phobics (NC/SP) as the contrasted groups, revealed a significant correlation between group membership and Powerful Others ( $r = .48, p < .002$ ), but not the other two subscales. A third set of contrasts, comparing the panic disorder and social phobia (PD/SP) groups showed significant correlations with Chance ( $r = -.30, p < .05$ ) and Powerful Others ( $r = .42, p < .004$ ).

## DISCUSSION

Both social phobics and individuals with panic disorder exhibited lower scores on perceptions of internal control than normal controls; furthermore, panic-disordered patients showed lower scores than social phobics. The two anxiety disorder groups also showed contrasting externality orientations. Panickers' external orientation was characterized by a perception of events as randomly occurring, as reflected by significantly higher scores on the Chance subscale when compared to normal controls and social phobics. In contrast, social phobics were distinguished from both normal subjects and panickers in their belief that control over events rests primarily in the hands of "powerful others," indicating a perception of others as potent determinants of their experience.

A series of partial correlational analyses were performed assessing the relationship between group membership and each subscale when the influence of the other two subscales was removed. Panic disorder was associated with endorsement of the Chance subscale and social phobia was associated with endorsement of the Powerful Others subscale. Notably, endorsement of Internality (using normal controls as a contrast group) was not significantly correlated with social phobia and showed only a trend for the panickers, when the influence of the other two subscales was removed.

Thus, there is an asymmetry in the influence exerted by the internality and the externality subscales: Significant relationships were obtained between specific externality perceptions and each anxiety disorder independent of the influence of internality perceptions, but the association of anxiety with perceptions of low internality was not significant (in the case of social phobia) or weakened (in the case of panic disorder) once the influence of externality perceptions was removed. These findings suggest that specific externality perceptions are the controllability belief characteristics highly associated with these anxiety disorders and that the presence of low-internality perceptions are strongly influenced by their association with externality perceptions.

The observation that each anxiety disorder is uniquely associated with endorsement of specific, externally oriented perceptions of control may be useful in making differential diagnoses between panic disorder and social phobia. For example, certain individuals experience both panic attacks and social anxiety where the fear of being observed during a panic attack is a salient concern (Fryer, 1991). Evaluating core cognitions in terms of perceptions of control could facilitate the determination of the primary diagnosis.

The general finding of low perceptions of internal control is consistent with current formulations of the general nature of anxiety. Barlow (1988), for example, has suggested that diminished perceptions of control may be a theme in the experience of anxiety and that such perceptions can maintain anxiety-related dysfunctions. The further finding that the experience of uncontrollability has distinct characteristics within each disorder suggests specific targets for intervention. Clinical interventions which incorporate the identification and assessment of perceptions of chance and powerful others in panic disorder and social phobia may show enhanced efficacy. Indeed, recent successful cognitive behavioral treatments of panic disorder involve the identification of internal or external cues that trigger panic attacks, so that the client may develop a sense of predictability, and thus a sense of control, about the attacks (Barlow & Cerny, 1988; Clark, 1986). Similarly, current cognitive-behavioral treatments of social phobia focus not only on clients' negatively colored beliefs about others' perceptions of them but also on their limited expectations concerning their ability to participate in and

guide the outcome of social interactions (Heimberg, 1990; Heimberg, Dodge, Hope, Kennedy, Zollo, & Becker, 1990).

The current study presents a profile of basic locus of control characteristics of individuals with panic disorder and social phobia. The findings are based on a relatively small sample of subjects and concern a limited set of dependent measures. The findings should best be viewed as raising an intriguing set of issues for further research. For example, it may be useful to include measures of controllability perceptions in treatment outcome studies in order to determine the importance of controllability beliefs in maintaining these two disorders. Studies utilizing larger samples and a range of measures related to panic and social phobia could identify potential relationships among types of controllability beliefs, syndromes, and a range of symptoms. Longitudinal designs may be helpful in determining the potential causal relationship between controllability beliefs and the onset of the disorders and in determining whether causal patterns differ among disorders. Lastly, these results, along with earlier studies indicating a relationship between perceptions of control and anxiety suggest that formulations which assume a unique relationship between control perceptions and the affective experience of depression must be re-evaluated (see also Mineka and Kelly, 1989).

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