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Post-Traumatic Stress: Attributional Aspects

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Although exposure to a traumatic event is thought to be the main aetiological factor in the development of post-traumatic stress disorder (PTSD: APA, 1987), a large amount of individual variance in the chronicity and severity of symptoms remains unaccounted for. In this paper, evidence will be reviewed for the possible mediating role of causal attributions and attributional style. It is suggested that these factors may be related to specific emotional states within PTSD and to particular coping behaviors.

KEY WORDS: causal attribution; attributional style; locus of control; post-traumatic stress disorder.

INTRODUCTION

Within the diagnostic literature, post-traumatic stress disorder (PTSD) has been defined by: (a) the experience of an event outside the range of usual human experience; (b) persistent reexperiencing of the event; (c) persistent avoidance of related stimuli or numbing of responsiveness; and (d) persistent symptoms of increased arousal. In addition, symptoms of anxiety and depression are commonly reported in conjunction with PTSD (APA, 1987). Although exposure to a traumatic event is thought to be a necessary etiological factor in the onset of PTSD, it is not clear whether exposure is in itself a sufficient etiological factor. Some survivors may present with no evidence of disorder while others exhibit considerable distress. For this reason, there has been much interest in the possible con-

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tributory factors that may mediate the effects of traumatic events and moderate their impact on mental health.

Most traumatologists now agree that response to trauma is multiply determined (Figley, 1986; Gleser *et al.,* 1981; Green *et al.*, 1985; Raphael, 1986). The primary determinant is the nature and intensity of traumatic experience. However, the emotional processing of the event is thought to interact with other factors within the individual and his or her social environment (Gibbs, 1989; Jones and Barlow, 1990; Lyons, 1991; March, 1990). The aim of this paper is to review the evidence for one set of factors, causal attribution and attributional style.

STRESS AND COPING

Current approaches to the study of stress adopt a social-psychological approach exemplified by "appraisal" theories of stress (Lazarus, 1966). Such models provide a framework for discussing the role of causal attributions and attributional style. More recent work by Lazarus and his colleagues (Folkman and Lazarus, 1988; Folkman *et al.*, 1986; Lazarus and Folkman, 1984) suggest that the appraisal process involves assessing the stressful situation (primary appraisal) and the personal resources available to deal with that situation (secondary appraisal). On the basis of this appraisal process, coping will be either problem focused (trying to do something about the situation) or emotion focused (trying to ameliorate the distressing feelings arising from the stress). A central component of the appraisal process following exposure to a traumatic event, it is suggested, is causal attribution.

ATTRIBUTIONAL PERSPECTIVES

Attribution theory is a branch of social psychology concerned with how people account for the events they experience. However, it has been increasingly applied to clinical theory and practice in recent years (Antaki and Brewin, 1982; Shaver and Drown, 1986; Turnquist *et al.*, 1988). According to attribution theory people have a need to explain the events that occur in their world, particularly when anything unusual, unwanted, or unexpected happens (Weiner, 1985; Wong and Weiner, 1981). There is much evidence that people do have a need to make causal attributions following traumatic events. Taylor (1983) reported that ninety five percent of her sample of women diagnosed as having cancer made some explanation for its occurrence. Women attributed their cancer to stress, the taking of birth

control pills, living near a chemical dump, hereditary factors, or diet. This seems to be true for children as well as adults. Dollinger (1986), for example, interviewed child victims of a lightning strike to assess their attributions for the incident. He found that most gave some explanation; for example, that it was God's will, chance, or nature.

The nature of a person's explanations are thought by attribution theorists to have consequences for how he or she will respond to that event (Brewin, 1988). The model that has received most attention is the reformulated model of learned helplessness (Abramson *et al.*, 1978); since revised as the hopelessness theory of depression (Abramson *et al.*, 1988; Alloy *et al.*, 1988). This model predicts that following a negative event, individuals who make causal attributions for the event's occurrence to stable and global factors experience an expectation of hopelessness. Symptoms are further compounded by lowered self-esteem if the stable and global attributions are also internal. Other variables, such as the lack of social support, are thought to contribute to this expectation of hopelessness. Causal attributions for the negative event are thought to be a function of the person's attributional style and the situational information available (Alloy and Tabachnic, 1984). However, although there is evidence for the role of causal attributions with a variety of outcomes that are within usual human experience (Sweeney *et al.*, 1986), the hopelessness model may be limited in its application to traumatic events. The nature of many events is such that attributions will invariably be made to external, specific, and unstable causes.

Other work by Weiner (1986) also promises to be useful in understanding emotional reactions following trauma. He draws attention to the way in which specific emotional states appear to depend on causal attributions for events. For example, feelings of guilt are generally experienced in the context of negative, personally controllable outcomes. Shame, on the other hand, tends to be experienced when an attribution is made to an internal stable cause.

Two studies based on Weiner's (1986) work have investigated the causal attributions made by survivors about events that occurred during disaster. In the first, Joseph *et al.* (1991) investigated the relationship between causal attributions and psychiatric symptoms in civilian survivors of a shipping disaster in which 193 people died: the Herald of Free Enterprise disaster. For purposes of legal assessment 20 survivors provided a detailed account of their experiences during the disaster. From these, causal attributions were extracted and rated along external–internal and uncontrollable–controllable dimensions. Although ratings were generally uncontrollable there was much variation on the externality–internality di-

mension. For example, some of the survivors provided accounts of their attempts to climb up a rope to safety: "I had several attempts to climb the rope but was unable to do so. There were no knots in it and it was very slippy." This was rated as external and uncontrollable, whereas the statement "I was unable to climb the rope because my legs had gone numb" was rated as internal and uncontrollable. Ratings were based on the attributional coding system developed by Stratton and his colleagues (Stratton *et al.,* 1986).

In this study it was found that more internal and controllable attributions were related to intrusive thoughts, depression, and anxiety at 8 and 19 months following the disaster. These findings are consistent with Weiner's (1986) cognitive theory of emotions which suggests that internal and controllable causal attributions for negative outcomes are related to feelings of guilt which in turn, it was suggested, may exacerbate symptoms. This finding is also consistent with Foa *et al.*'s (1989) prediction that symptoms of PTSD would be enhanced by the perception of unexercised control.

A second study by Joseph *et al.* (1993) replicated the above work with 16 adolescents who survived the Jupiter cruise ship disaster. In this study, however, attributions were overwhelmingly uncontrollable so only the externality–internality dimension was rated. For example, the statement "It was not easy swimming because I had my jeans and sweater on" was rated as external whereas the statement "I found it very hard to swim out of the suction as I am not a strong swimmer" was rated as internal. The results confirmed that for adolescents causal attribution is an important aspect of disaster response. More internal attributions for disaster-related events were associated with greater depression and intrusive thoughts one year later. However, whereas it was hypothesized that the results with the Herald survivors reflected the operation of guilt, the virtually complete absence of personally controllable attributions in this study suggested that it might be shame in this case that provides the link with symptoms. It has been argued elsewhere, however, that self-attributions of causality for negative events ought to be related to the re-establishment of perceived control over future outcomes, and thus to successful coping with accidents (Brewin, 1984) and victimization (Shaver and Drown, 1986). However, this argument relies on the expectation of the event's recurrence. If an event is not likely to recur, there may be little benefit in perceiving it as having been within one's control.

Although both of these studies suggest an intriguing link between causal attributions and post-traumatic stress, the samples were small and highly selected. Also, no evidence was found to support a causal relationship between attributions and symptoms although it should be noted that

symptoms were probably too stable to permit the demonstration of causal effects. However, even if causal attributions are not responsible for the onset of symptoms they may be responsible for their maintenance. Attributions may be important in the way survivors cope subsequent to disaster, which in turn may exacerbate symptoms.

These two studies suggest that causal attributions for disaster-related events may be important in understanding individual differences in the severity and chronicity of symptoms. However, the question remains as to the determinants of such attributions. Specifically, to what extent do causal attributions reflect situational information as opposed to the tendency to explain events in a habitual way. The hopelessness theory predicts that one determinant of causal attribution is the person's attributional style.

ATTRIBUTIONAL STYLE

Other research has investigated the relationship between attributional style and PTSD. The Attributional Style Questionnaire (ASQ: Peterson *et al.*, 1982; Peterson and Villanova, 1988) presents respondents with hypothetical events, half are good events and half are bad events. For each hypothetical event the subject is asked to write down what they feel would be the major cause of that event if it happened to them, and then to rate that cause along the three attributional dimensions of internality, stability, and globality. Using this measure with Vietnam veterans, McCormick *et al.* (1989) found PTSD to be significantly related to a more internal, global, and stable attributional style for negative events, and a less internal, stable, and global attributional style for positive events.

One longitudinal study has examined the relationship of attributional style to PTSD in Israeli combat veterans. Mikulincer and Solomon (1988) investigated whether veterans who exhibited PTSD 2 and 3 years following the Lebanon war had different attributional styles than those whose emotional balance was soon restored. They found that increases in PTSD intensity, psychiatric symptomatology, and problems in social functioning, were all related to: first, the attribution of good events to more external and uncontrollable causes, and second, the attribution of bad events to more external, stable, and uncontrollable causes.

It would seem, therefore, that attributional style is associated with PTSD. A discrepancy between these two studies, however, is the finding by Mikulincer and Solomon (1988) that more external attributional style for negative outcomes is associated with PTSD. They suggest that this is explained by the denial of personal responsibility by PTSD veterans. Although this is an interesting suggestion, and avoidance symptoms may

manifest in a particular attributional pattern, this finding might alternatively be a function of the methodology employed by Mikulincer and Solomon. Subjects were asked to rate the cause of recent events along dimensions such as ability and effort which were then judged by independent raters to reflect the various attributional dimensions. This methodology has been criticized as it assumes that causes will be perceived to have similar characteristics by all subjects (Weiner, 1983).

LOCUS OF CONTROL

The area of research that has received most attention, however, is generalized expectancies for internal–external control of reinforcement, or as it is more commonly known, locus of control (Rotter, 1966). Although this is not a measure of attributional style, there are important links between the two concepts. Locus of control measures do not take into account whether the outcomes are positive or negative. Although this was originally justified by the assumption that there existed a general disposition to make internal or external attributions this assumption has since been questioned. Brewin and Shapiro (1984), for example, showed that Rotter's (1966) measure appeared to be measuring locus of control for positive outcomes. If this is true, hopelessness theory would predict that a more external locus of control should be associated with poorer outcome. Indeed, there is good evidence that higher externality is associated with greater depression and is a possible vulnerability factor in adjustment to adverse life-events (Lefcourt *et al.*, 1984; Benassi *et al.*, 1988).

Much interest has focused on whether this finding extends to PTSD. In the first study to address this question, Frye and Stockton (1982) found that the diagnosis of PTSD was associated with higher externality in Vietnam veterans. Similar findings were reported by Solomon, Mikulincer, and Benbenishty (1989) in Israeli combat veterans. What was most interesting in the study by Solomon, Mikulincer, and Benbenishty was that this relationship was observed only in those who reported a low battle intensity. This finding might account for the fact that the strength of the relationship between locus of control and PTSD has not always been found to be great. For example, Orr *et al.* (1990) found Vietnam veterans suffering from PTSD to show only a trend towards a more external locus of control. These results are therefore in accord with attributional style research which shows greater externality for positive outcomes to be associated with PTSD (McCormick *et al.*, 1989; Mikulincer and Solomon, 1988).

PROPOSED MECHANISMS

Several explanations have been offered to account for the relationship between attributional style and PTSD. Frye and Stockton (1982), for example, suggested that those with an external locus of control are more vulnerable to the stress of battle. Although vulnerability factors have received much attention in the trauma literature this has been mainly in relation to neuroticism (McFarlane, 1989) and there is as yet no evidence to support a vulnerability model for attributional style.

What is interesting, however, is the finding of Solomon, Mikulincer, and Benbenishty (1989) that locus of control effects may depend on the intensity of exposure. They suggest that the moderating effect of battle intensity was due to its informational value in helping the soldier explain his behavior to himself. High intensity battle, they argue, leads the soldier to explain his combat stress reaction entirely by the stressful events whereas low intensity battle leads to attributions affected by locus of control. These results suggest that locus of control may moderate the effects of trauma only below a certain threshold of event intensity.

Under these conditions it may be that situational information is less important than attributional style in shaping causal attributions. The role of causal attributions may be to influence the coping strategies employed following adversity. There is some evidence for this with normal populations. Brewin, MacCarthy, and Furnham (1989), for example, investigated whether causal attributions concerning negative outcomes were related to seeking support in the face of adversity. Individuals who blamed their own inadequacies for a specific negative event were more likely to have withdrawn socially and were less likely to have used coping strategies involving family, friends, and other people. Their findings are consistent with the suggestion that negative cognitive appraisal is related to less social integration, and to the perception of whether it is appropriate to seek support. These ideas are of much relevance to the study of trauma where increased social withdrawal is seen as a characteristic feature.

Brewin *et al.* (1989) also investigated whether attributional style concerning negative outcomes was related to perceptions of the availability of support. Their results showed that individuals who attributed negative outcomes to more stable and global factors also considered that they had fewer potential sources of social support. Turning to locus of control, Anderson (1977), following Hurricane Agnes, also found that those with an external locus of control perceived the event as more stressful and used less active coping strategies. In a more recent study Solomon, Mikulincer, and Avitzur (1988) examined the relationship between locus of control, coping, social support, and PTSD in Israeli veterans at 2 and 3 years following combat.

They examined: first, the relation between personal and social factors, and PTSD at each point in time; and second, the relation between changes in the course of PTSD and changes in both personal and social factors. As expected, the intensity of PTSD declined between the two points of time, reflecting a process of recovery. In accord with this finding, locus of control became more internal over time, there was less emotion focused coping, and more perceived social support. Associations were found at each point in time between PTSD intensity and personal and social factors. In both years, more intense PTSD was associated with external locus of control, emotion focused coping style, and insufficient social support. With regard to locus of control, although correlated at both times with PTSD, the removal of the contributions of coping strategies and social support to PTSD variance cancelled out the significance of locus of control. Solomon *et al.* suggest that this is consistent with the idea that internal locus of control is associated with the use of more task relevant problem focused coping behavior, and less task irrelevant emotionally focused strategies. Other research has shown no significant association between attributional style and post-traumatic response, but an association between more internal responsibility for positive outcomes and greater social support which in turn is related to lower intrusive and avoidant symptoms (Joseph *et al.*, 1992). This research suggests, then, that coping and support may mediate between attributional style and PTSD.

METHODOLOGICAL CONSIDERATIONS

The literature is at present limited by several methodological problems. If subjects have PTSD prior to the start of any study the findings cannot provide definitive evidence as to the direction of causality between variables and once established one might expect a mutually reinforcing relationship. Future studies should attempt to assess attributions before the development of severe and chronic symptoms. Other relationships between attributions and symptoms may be envisaged. For example, depression, an associated feature of PTSD, may lead to an enhanced focus on the self (Ingram *et al.*, 1987), which is in turn reflected in the identification of more internal causal factors.

Also, it needs to be emphasized that diagnostic criteria for PTSD are still very much in their development. There remains a lack of a gold standard in measuring PTSD, which is further compounded by changing criteria. For this reason it could be argued that symptom based research might be more appropriate than diagnostic based research. Studies that have employed a symptom based approach often find that intrusion and avoidance

operate differently with respect to other variables. For example, in the studies by Joseph *et al.* (1991; 1993) it was found that more internal causal attributions for disaster-related experience were associated with intrusion but not avoidance. They note that this may reflect the phasic model proposed by Horowitz (1979), who suggests that intrusive and avoidant symptoms are phasic states that oscillate in ways particular to the individual, eventually reaching a relative stability when a period of completion is said to have been reached and it may be that attributions would have been associated with avoidance at other points in time.

So, one aspect of diagnostic based research that should be considered in future studies is that attributional variables may be predictive of particular outcomes only at certain times in the period of adjustment. If this is true, a problem arises when research employs very heterogeneous measures of post-traumatic phenomena that include aspects of depression and anxiety as well as the core symptoms of intrusion and avoidance. It may be that attributional variables do not mediate between the traumatic event and either intrusion or avoidance, the core characteristics of PTSD, but rather exert their effect only on overlapping depressive symptomatology. In order to clarify these issues, research needs to examine specific relationships between personal and social factors and PTSD symptoms, and where possible partial out associated symptomatology, such as depression.

Much of the relevant research has focused on locus of control rather than attributional style. Although there are links between these two concepts, and the research has been largely consistent, future studies should, as Green *et al.* (1985) argue, use uniform measures. Brewin and Shapiro (1984) suggest the use of attributional style measures that take into account both positive and negative outcomes and also independently measure the dimensions of globality, stability, and internality.

RESEARCH DIRECTIONS

It has been suggested by Joseph *et al.* (1991; 1993) that causal attributions for disaster-related events may predict specific emotional states, such as guilt or shame, which in turn exacerbate responses to disaster. Further research based on Weiner's (1986) theory is needed to investigate the hypothesized link between causal attributions and these specific emotional states. In addition, the question remains as to whether particular emotional states are only related to attributions for specific types of event. Also, the relationship between causal attributions and help-seeking behavior and social support remains to be confirmed. This is of particular therapeutic sig-

nificance as evidence suggests that individuals who blame themselves are less likely to use coping strategies that make use of family and friends.

Although causal attributions and attributional style have been found to be associated with post-traumatic symptoms, there is at present no evidence supporting a causal path between these variables. In addition to longitudinal research, it is also suggested that future research should attempt to address the association between causal attributions for real events and attributional style for hypothetical events in order to explore a vulnerability model as has been suggested in depression research (Brewin, 1988). It is not known to what extent the causal attributional data employed in the studies by Joseph *et al.* (1991; 1993) reflect what actually happened during the event as opposed to attributional style. It is thought that the attributions people make for the negative events they experience are a joint function of the situational information surrounding these events and their attributional style (Alloy and Tabachnic, 1984).

THERAPEUTIC IMPLICATIONS

The work reviewed offers evidence that although exposure to a traumatic event is the necessary aetiological factor in PTSD, causal attribution and attributional style are possible contributory variables to the severity and chronicity of post-traumatic symptoms. However, it is acknowledged that the role such variables play might be small, particularly following extremely traumatic events. What is important is the fact that attributional variables are modifiable in some way. This presents exciting implications for therapeutic intervention.

Cognitive-behavioral theorists propose that psychopathology stems from inaccurate conclusions being drawn from environmental events and that changing these conclusions should therefore lead to a change in emotional state. In particular, the relevance of attribution therapy to clinical practice has received much attention in recent years (Layden, 1982; Brewin, 1988) and there may be considerable scope for improving distress following exposure to traumatic events. This might be focused at changing cognitions about the cause of the event itself or by altering perceptions of the causes of significant events that took place during the event. Also, Milgram (1986) notes that the framework within which helping takes place is itself important and he has suggested that efficacious treatment of PTSD requires the patient to take responsibility for the progress of his or her own therapy. It is suggested, therefore, that one of the possible processes underlying successful therapeutic intervention with survivors may be the change in their causal attributions for trauma-related experiences. Therapy should aim for

more realistic attributions (Försterling, 1988), which may involve shifts in different directions depending on individual circumstances.

There is much evidence for the efficacy of exposure therapy with anxiety disorders (Foa and Kozak, 1985) and it is currently a widely used treatment for PTSD. This is a counterconditioning procedure in which exposure to a feared situation without the occurrence of the imagined negative consequence is used to overcome anxiety. It may be, therefore, that exposure therapy provides the patient with information that enables them to reassess their own experiences, and thus adopt less guilt or shame provoking attributions. Research is needed to investigate cognitive changes during the course of therapy and whether these changes are predictive of outcome.

In conclusion, there is growing evidence that causal attribution and attributional style may be important in the emotional processing of a traumatic experience. Although at present the number of studies are limited, their findings are generally consistent. But even if such variables are not found to be causally related to PTSD it would seem that they are useful markers of more extreme psychological distress.

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