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Emotion-specific and emotion-non-specific components of posttraumatic stress disorder (PTSD): implications for a taxonomy of related psychopathology

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Abstract

Many cognitive theories of posttraumatic stress disorder (PTSD), including our own SPAARS model, propose that one basis of the disorder is the cognitive system's persistent failure to resolve discrepancies between trauma-related information and the content of pre-existing mental representations, such as schemas. This leads to the characteristic PTSD symptom pattern of re-experiencing and avoidance of trauma-related material. Furthermore, the nature of this unresolved discrepancy revolves around appraisals of threat and the corresponding emotion profile in PTSD is therefore predominantly intense fear and anxiety. This paper argues that this general framework can be extended to discrepancies around other appraisal dimensions such as loss, and consequently to other emotions such as sadness. A localized taxonomy is therefore proposed comprising emotional disorders that resemble PTSD in their basic patterns of re-experiencing and avoidance symptoms—what we call their 'emotion-non-specific component'—but that differ from PTSD in terms of the core emotions involved—what we call their 'emotion-specific component'. The clinical and nosological implications of this argument are discussed.

Keywords: PTSD; Emotion; Disgust; Anger; Sadness; Fear; Emotional disorder

1. Introduction

Highly emotive events have been implicated in the aetiology of a number of forms of psychopathology. For example, there is an extensive literature on the role of life events in depression

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(Brown & Harris, 1978). Posttraumatic stress disorder (PTSD), acute stress disorder and adjustment disorders (American Psychiatric Association [APA], 1994) are psychiatric conditions where specific traumatic events are explicitly tied to aetiology. And atypical bereavement reactions, such as 'complicated grief', follow the death of a loved one. Each of these areas of psychopathology has its own specialist research and clinical literatures and, historically, there has often been minimal acknowledgment and cross-fertilization between these related domains. For example, following the Coconut Grove fire in Boston in the 1940s. Lindeman (1944) documented and worked clinically with the bereavement reactions of the survivors. At the same time, and apparently in isolation from Lindeman, Adler (1943) documented the posttraumatic anxiety reactions of survivors of the disaster.

Since the 1970s, there has been the beginnings of a rapprochement between these research/clinical domains (e.g. Horowitz, 1986, 1997). Furthermore, there has been increasing interest in the relationship between such 'disordered' reactions to intensely stressful events and the way that individuals deal with relatively more minor emotive events on a day-to-day basis (e.g. Clark & Watson, 1988). The present paper draws on both of these themes in outlining a framework for conceptualizing certain presentations of psychopathology following extremely emotive events, beginning with an analysis of PTSD. The nosology of reactions to traumatic events remains the subject of considerable debate in the literature (e.g. Raphael & Martinek, 1997) and any progress towards resolving these debates is likely to have beneficial implications for future clinical practice and research.

2. Posttraumatic stress disorder

PTSD is a psychiatric diagnostic label given to a particular set of emotional and psychological sequelae that can arise following an event that, at the time of its occurrence, instigated feelings of "intense fear, helplessness or horror" (Criterion A; APA, p. 428). The listed symptoms cluster into three core groups: Criterion B—re-experiencing the event (in the form of intrusive thoughts or images, physiological and/or mental distress in response to event-reminders, flashbacks, or nightmares); Criterion C—avoidance (trying not to think, talk about or have feelings about the event, social withdrawal or detachment, efforts to avoid event-reminders, loss of interest, amnesia, a sense of foreshortened future, and numbing); and Criterion D—being in a state of hyperarousal (increased irritability, poor concentration, disturbed sleep, exaggerated startle, and hypervigilance for danger).

PTSD as a definable disorder was included in the *Diagnostic and Statistical Manual* (DSM) for the first time in the Third Edition (DSM-III; American Psychiatric Association, 1980)[1] and the criteria were altered for the DSM-III-R and again for the DSM-IV. Since the inception of PTSD in 1980, a host of theoretical models of the disorder have been formulated (for detailed reviews, see Brewin, Dalgleish, & Joseph, 1996; Brewin & Holmes, 2003; Dalgleish, 2004; Foa & Rothbaum, 1998; Power & Dalgleish, 1997). All of the major models of psychology are represented: the biological (e.g. van der Kolk, Greenberg, Boyd, & Krystal, 1985); the psychody-

[1] Although prior to the Third Edition, the concept of traumatic neurosis did exist in the Manual.

namic (e.g. Freud, 1919); the behavioral (e.g. Keane, Zimmering, & Caddell, 1985); the cognitive (e.g. Foa, Steketee, & Rothbaum, 1989); and the social–cognitive (e.g. Janoff-Bulman, 1992). For the purposes of the present paper, we shall use our own cognitive model of PTSD—the SPAARS (schematic, propositional, analogue and associative representational systems) approach (Dalgleish, 1999, 2004; Power & Dalgleish, 1997) as a framework for thinking about psychological reactions to extremely emotional events on a broader basis.

The SPAARS model of PTSD is outlined comprehensively elsewhere (see Dalgleish, 2004) and so here we shall selectively focus on the main principals of the model. We begin with a brief discussion of how those principles might account for the three symptom clusters of PTSD noted above.

2.1. The SPAARS model of PTSD

According to the SPAARS model, events that are liable to lead to PTSD have two properties:

1. They are significantly discrepant in content from pre-existing mental representations (schematic models) of the self or world (see also Horowitz, 1986; Janoff-Bulman, 1992). Such discrepancy can be conceptualized in various ways. So, for example, a violent assault that occurred 'out of the blue' in a familiar and previously safe location can be thought of as highly discrepant from schematic representations coding the world as safe, controllable, and predictable and from representations coding the self as efficacious and able to cope with the unpredictability of experience. Or, a combat soldier who witnessed a battlefield atrocity may experience that event as *consistent* with pre-existing mental representations of his/her world, but may find that his/her reactions to the atrocity and ability to cope with it are *discrepant* from pre-existing representations of the self. Or, finally, someone with a long history of psychological and psychiatric difficulties, but who is currently mentally healthy, may experience a new trauma as highly *consistent* with pre-existing 'latent' negative schemas or representations about the self, but *discrepant* from supraordinate functional schemas that are underlying his/her current mentally healthy state of mind (see Dalgleish, 2004, for further discussion of such examples and additional examples). For the purposes of the present paper, we are simply going to use the blanket term 'discrepancy' to refer to the different conceptualizations of discrepancy outlined here and elsewhere (Dalgleish, 2004).
2. They are highly emotive, leading to intense fear and distress via either an 'automatic' or an 'appraisal-driven' route, or both (Power & Dalgleish, 1997). Appraisal-driven emotions arise from an 'on line' evaluation of incoming information with respect to an individual's current and active goals. For example, in the case of traumatic events, information that signals a major *threat* to active goals (such as the goal of personal survival) will lead to the generation of intense fear. Furthermore, the extreme discrepancy between a traumatic event and existing meaning structures (the schematic models of self and world described in point 1 above) will itself be appraised, leading to what we call 'existential emotions' (Dalgleish, 2004) such as helplessness and horror. According to the SPAARS account, repeated appraisal-driven elicitation of an emotion in response to particular patterns of incoming information will lead to the automatization of that information–emotion relationship. Future encounters with the same, or similar, information will then lead to the automatic activation of the corresponding

emotion with no on-line appraisal occurring. For example, an assault victim may experience an intense and automatic fear reaction whenever she or he sees someone who resembles the assailant.

Within the SPAARS model, these two properties of traumatic events lead to the symptoms of PTSD broadly in the following three ways. Firstly, the discrepancy between the event and pre-existing schemas (whether latent or supraordinate) leads the SPAARS system to try to resolve the discrepancy via processes of schema change (assimilation and accommodation). For example, an assault victim's pre-trauma representations of the world as 'safe-enough' and 'controllable-enough' would shift (accommodate) to assimilate the rare occurrence of dangerous, uncontrollable experiences. This can be a nonconscious process or could involve explicit conscious mental work on the part of the trauma survivor. While these attempts at discrepancy resolution persist, the representation of the traumatic event is kept active within the cognitive system (cf. Horowitz, 1986) thereby leading to the intrusion or re-experiencing symptoms of PTSD. Secondly, these repeated intrusions of the trauma memory into awareness lead to continued and frequent elicitation of the intense affect associated with the memory (via automatic and/or appraisal-driven routes). This susceptibility to re-experiencing, along with the associated affect, leads to the avoidance symptoms of PTSD as the trauma survivor attempts to mitigate the levels of intrusion and distress. Again, this could involve explicit, conscious efforts at avoidance or reflect more automatic processes as in numbing and amnesia (e.g. Dalgleish, Mathews, & Wood, 1999). Finally, the continuous activation of the trauma representation leads to chronic low-level elicitation of the associated emotions resulting in the hyperarousal symptoms of PTSD.

2.2. *Reconceptualizing PTSD in terms of emotion-specific and emotion-non-specific symptoms*

Within the context of the SPAARS framework, one way to conceptualize PTSD is in terms of two types of construct that we shall call 'emotion-non-specific' and 'emotion specific'.

2.3. *The emotion-non-specific component of PTSD*

The emotion-non-specific component includes those aspects of PTSD that are a function of the cognitive system's attempts to resolve the significant discrepancy between the content of the traumatic event and the content of pre-existing schematic representations. The emotion-non-specific component is therefore about discrepancy resolution per se, independent of the type(s) of emotional response (e.g. fear) associated with the original event.

The proposal here is therefore that the ongoing attempts by the cognitive system to resolve the discrepancy between the traumatic event and pre-existing meaning structures drive the re-experiencing symptoms of PTSD (Criterion B), as noted above. In addition, the fact that traumatic information thereby remains active in the system, leading to the generation of intense affect, drives the avoidance symptoms of PTSD (Criterion C). Finally, the appraisal of this discrepancy leads to the existential emotions of helplessness and horror listed under Criterion A. Our argument is therefore that this oscillation between intrusion and avoidance and the associa-

ted existential affect are processes that are independent of which emotions are actually elicited by the event—they are emotion-non-specific.

2.4. The emotion-specific component of PTSD

The emotion-specific component includes those aspects of PTSD that relate to the fact that the relationship of the traumatic event to the traumatized individual's active goals is one of significant threat and therefore that the dominant emotional response is intense fear (Criterion A). In addition, intense fear and anxiety will be elicited in response to the re-experiencing of the event (Criterion B). Finally, the physiological concomitants of a low-level chronic fear response as a function of the continuous activation of the mental representation of the traumatic event will manifest themselves as the hyperarousal symptoms of PTSD (Criterion D). The argument is therefore that this emotion-specific component of PTSD is intrinsically related to the type of emotion elicited by the original trauma, namely fear.

2.5. Extending this emotion-specific and emotion-non-specific distinction to emotions other than fear

The purpose of this paper is to see how usefully this emotion-specific/emotion-non-specific distinction can be extended to understand psychological reactions to highly emotive events where the dominant appraisal is not one of threat and the primary emotional response is therefore not fear.

The thesis is that, within the SPAARS framework, any event that is extremely discrepant from pre-existing schematic meaning structures will give rise to the pattern of emotion-non-specific 'symptoms' outlined above (i.e. re-experiencing and avoidance, along with existential affect). In addition, the nature of the emotion-specific symptoms in response to that event will relate to the types of appraisal-driven and automatic emotions that the event generates. These emotions will differ as a function of the implications of a given event for the individual's active goals—that is, as a function of the nature of the appraisals.

Cognitive theories of normal-emotions have focused on which emotions are generated as a function of which type of appraisal (Oatley & Johnson-Laird, 1987; Ortony, Clore, & Collins, 1988; Power & Dalgleish, 1997). So, for example, in PTSD, the traumatic event implies a threat to the completion or maintenance of numerous important goals, thereby giving rise to fear. In contrast, an event implicating the loss of an important goal, according to these theories, would be associated with the emotion of sadness. So, for instance, the death of a loved one and thereby the multitude of shared goals that were a function of the relationship with that person would usually be associated with intense sadness. Although there are shades of opinion as to which appraisals correspond to which specific emotions within this theoretical framework, an omnibus list for four negative basic emotions based on consensus in the literature (Oatley, 1992; Oatley & Johnson-Laird, 1987; Scherer, 1999) would look something like that in Table 1.

In summary, therefore, the present proposal is that there might be a family of 'PTSD-like' psychological reactions to extreme events that will resemble PTSD in terms of an emotion-non-specific component (existential affect and the characteristic pattern of intrusion and avoidance) but that will differ in terms of an emotion-specific component in ways that are dependent

Table 1
Appraisal dimensions associated with the negative basic emotions (based on Power & Dalgleish, 1997)

Basic negative emotion	Appraisal dimensions
Sadness	Loss or failure (actual or possible)
Anger	Blocking or frustration of goal through perceived other agent
Fear	Physical or social threat
Disgust	Unwanted association of person, object or idea that is repulsive to the self, and/or to valued roles, goals or ideals

on the specific emotional nature of the event. The next section of the paper pursues this argument by considering the other negative basic emotions of sadness, anger and disgust.

3. Sadness and traumatic loss reactions

In cognitive theories of normal-emotions (e.g. Oatley & Johnson-Laird, 1987; Power & Dalgleish, 1997), sadness is conceptualized with respect to appraisals of loss. Of interest to the arguments being developed here then is how people react following extreme experiences of loss.

An extreme experience of loss is implicated in a number of psychological states and related psychopathologies. For example, there is an extensive literature on life-events and depression (Brown & Harris, 1978) and on normal and atypical bereavement reactions (Stroebe, Stroebe, & Hansson, 1993), including so-called complicated grief. Indeed, bereavement reactions represent the most well-researched of the psychological responses to extreme loss and in order to illustrate the present argument, we shall therefore consider normal and pathological grief reactions in some detail.

There is an extensive literature on the normative course of response to extreme loss in the form of grief reactions following the loss of a loved one (Bowlby, 1960, 1980; Horowitz, 1979, 1997; Horowitz, Wilner, Marmar, & Krupnick, 1980; Pollock, 1987; Glick, Weiss & Parkes, 1974). Much of this work argues that grief is not so much a linear process as a series of overlapping, dynamic stages that vary across individuals. Shuchter and Zisook (1993) summarize by suggesting three phases: (1) an initial period of shock, disbelief and denial; (2) an intermediate acute mourning period of somatic discomfort, emotional distress and social withdrawal; and (3) a final period of restitution when the person comes to term with the loss. Finally, there is something of a consensus in the bereavement literature that pathological forms of bereavement reaction are associated with a failure to achieve the third stage in the above process and consequently to experience chronic emotional distress as a result of the loss.

These three stages of normative grief mirror Horowitz's (e.g. 1986, 1997) discussion of the course of normative posttraumatic stress reactions and the route to pathological grief reactions within his framework is often similar to that outlined in theories of PTSD. Indeed, in Horowitz's more recent formulations of his ideas (e.g. Horowitz, 1997), the patterns of response following bereavement and trauma are conceptualized within exactly the same framework.

PTSD and pathological bereavement have a number of symptoms in common. For example, in Shuchter's multidimensional assessment of grief (e.g. Shuchter, 1986; Shuchter & Zisook,

1993) that maps the different 'symptoms' of the grief reaction, there are descriptions of re-experiencing phenomena including intrusive thoughts and in particular intrusive images of the deceased, often incorporating changes in the person's appearance as s/he progressed through an illness. Similarly, Lehman, Wortman, and Williams (1987) reported that 96% of their sample of bereaved parents had experienced intrusive thoughts, images or mental pictures of the deceased during the previous month.

In addition to these re-experiencing symptoms, Shuchter describes a number of avoidance phenomena associated with bereavement such as pushing feelings and thoughts of the deceased away, avoidance of looking at pictures or belongings of the deceased, avoidance of going to places previously visited with the deceased or to the cemetery, distraction and displacement with other activities of thoughts about the deceased, and finally, feelings of emotional numbness and disbelief. Similarly, Prigerson et al. (1999) describe further avoidance symptoms comprising feelings of futility about the future, a subjective sense of numbness, and a difficulty acknowledging the death. This list of re-experiencing and avoidance symptoms associated with bereavement reactions is notably similar to the list of symptoms of PTSD under Criteria B and C in the DSM-IV.

Despite this clear overlap between some aspects of PTSD symptomatology and the symptoms implicated in pathological grief reactions, there has generally been resistance to the conceptualization of pathological grief as a form of PTSD. Much of this work has taken the line that PTSD and bereavement reactions can co-exist (especially when the circumstances surrounding the death have been 'traumatic') but are not the same thing. For example, Pynoos and Nader (1990), in order to investigate the two putative sets of responses of grief and PTSD to the same event, developed two measures: a Grief Inventory (GI) and a PTSD Reaction Index (PRI). In their study of the reactions of children following a sniper attack at a school, they found that the severity of exposure to the threat correlated with posttraumatic stress symptomatology levels as measured by the PRI, whereas the closeness of the relationship with the deceased children correlated with levels of bereavement as measured by the GI. Similar work has been carried out by Prigerson et al. (1999) and this is discussed in more detail below.

The case against conceptualizing bereavement as PTSD is clarified by examining the prevalence of the Criteria A and D symptoms of PTSD in pathological grief reactions. Pathological grief reactions are predominantly characterized by the emotion of *sadness* not fear and by the experience of *loss* rather than threat; something that Horowitz et al. (1980) have called a "frighteningly sad response to loss" (p. 1159). Shuchter and Zisook (1993) describe these reactions as follows: "These are exquisitely painful, often total-body experiences of autonomic explosion: a wrenching of the gut, chest pain, light-headedness, weakness, the rapid welling up of tears, and uncontrollable crying that frequently accompany this state. These responses can erupt suddenly and unexpectedly, particularly in the first days and weeks, and usually in response to some reminder of the person's loss. These reminders can be from a thousand sources—from any of one's senses, from a lifetime of memories, and from the most innocuous seeming situations" (p. 28). In addition, Raphael and Martinek (1997) highlight persistent feelings of nostalgia and intense and profound yearning for the lost person. Feelings of anxiety and fear do get reported in bereavement (in 10–14% of cases) but these predominantly revolve around fears of not coping in the future following the loss, and related feelings of insecurity (Zisook, Mulvihill, & Shuchter, 1990). Conceptually, this anxiety has been seen as separation

anxiety and Raphael and Martinek (1997) have argued that it is specific to separation from the lost person, and is generated by imagined futures without the lost person and is precipitated by his/her failure to return.

Despite the fact that, in terms of specific emotions, grief reactions are best conceptualized in terms of sadness rather than anxiety/fear, pathological grief appears to be associated with similar existential emotions of horror and disbelief as PTSD. For example, Prigerson et al. (1997) in their discussion of a 59 year-old widow whom they describe as 'a case of loss-induced trauma' note how the patient felt 'incredulous and stunned' by her husband's death and was unable to accept it.

Furthermore, although there is some overlap between bereavement reactions and Criterion D symptoms of PTSD, there are some important differences. The overlaps involve the poor memory and concentration and irritability associated with both problems. However, people rarely report an exaggerated startle response following a bereavement that has not also involved a traumatic event (Schut, de Keijser, & van den Bout, 1991). Additionally, although hypervigilance can be associated with bereavement, Raphael and Martinek (1997) and Jacobs (1999) have cogently argued that it involves scanning the environment for cues of the lost person rather than scanning for threat. Finally, McDermott, Prigerson, and Reynolds (1997) have shown that there is no evidence of hyperaroused sleep patterns among individuals with pathological grief using EEG analysis.

These reliably distinctive patterns of symptoms associated with PTSD and pathological bereavement reactions have led two independent groups of researchers to propose diagnostic criteria for a separable disorder of pathological grief. Prigerson and colleagues (Jacobs, 1999; Prigerson et al., 1999) have proposed the term traumatic grief, Horowitz et al. (1997) have argued for complicated grief disorder. The profiles of symptoms for these two putative disorders are remarkably similar, though there are some minor differences (Jacobs, 1999), and reflect the various symptoms discussed above. The two groups have now published a consensus paper (Prigerson et al., 1999) and settled on the term complicated grief (CG).

Prigerson et al. (1999) present data in support of the distinction between CG and PTSD. In a sample of 76 young adults exposed to a friend's suicide, Prigerson et al. reported that 3/7 who met criteria for PTSD did not meet criteria for CG and 12/16 who met criteria for CG did not meet criteria for PTSD. Thus, although there is diagnostic overlap between CG and PTSD, the two disorders are not isomorphic. CG reactions have also been shown to be reliably different to bereavement-related depression (Boelen, van den Bout, & de Keijser, 2003; Prigerson et al., 1995).

3.1. Conceptualizing pathological grief reactions in terms of emotion-specific and emotion-non-specific components

In line with those nosological proposals of Prigerson, Horowitz and colleagues, the intention of the present thesis is to also argue that conceptualizing extreme bereavement reactions as a form of PTSD is problematic and that the overlaps and differences between the two sets of experiences can be accounted for in terms of the emotion-specific and emotion-non-specific components of this type of psychopathology that were outlined earlier. The suggestion is that pathological grief reactions (including CG) are a result of a persisting, unresolved and extreme

discrepancy in the cognition–emotion system such that the bereavement cannot be readily assimilated by pre-existing mental representations. It is proposed that the *fact* of the extreme discrepancy leads to the emotion-non-specific pattern of re-experiencing and avoidance of aspects of the bereavement event. Furthermore, appraisal of the extremity of the discrepancy leads to existential affective reactions of horror and disbelief (Prigerson et al., 1997). It is in terms of this emotion-non-specific component that the symptoms of pathological grief reactions and PTSD overlap (see also, Horowitz, 1997).

However, instead of the bereavement predominantly leading to fear reactions (as traumas do in PTSD), it is proposed that the resultant dominant emotion is one of sadness and its variants (e.g. nostalgia, yearning; Power & Dalgleish, 1997) in response to the fact that the primary appraisal in bereavement is one of loss. Extreme sadness and its variants, therefore, constitute the emotion-specific component of this form of psychopathology and will be experienced both at the time of the event (cf. Criterion A in PTSD) but also as a result of re-experiencing the event (cf. Criterion B in PTSD). Furthermore, in lieu of the Criterion D symptoms of PTSD, pathological grief is associated with the physiological concomitants of sadness and its variants, rather than fear. As in the case of PTSD, these include poor memory and concentration, and hypervigilance, though in the case of pathological grief this is for the cues relating to the lost person. Unlike the case of PTSD, they do not include an exaggerated startle response, sleep disturbance nor a hypervigilance for threat.

In this section, we have concentrated on the example of pathological grief reactions to illustrate the idea of a form of 'discrepancy-based' psychopathology revolving around an emotion other than fear and, hence, differing from PTSD in emotion-specific ways while resembling PTSD in emotion-non-specific ways. By starting from the perspective of normal-emotion theory, it is possible therefore to generate descriptions of psychopathology (namely, PTSD and pathological grief) similar to those derived from a symptom-based approach.

Extreme loss experiences are not limited to bereavements and the present analysis can be extended to other forms of loss; for example, the sudden break up of a marriage or relationship (Mearns, 1991). Indeed, recent research has shown that depression can also be associated with re-experiencing and avoidance phenomena (Brewin, Phillips, Carroll, & Tata, 1996; Kuyken & Brewin, 1994; Reynolds & Brewin, 1998, 1999) and it is possible that some forms of reactive depression that are closely associated with identifiable life-events could be conceptualized in terms of the discrepancy-based analysis proposed here. For example, Brewin et al. (1996) found an association between intrusive memories of childhood abuse (which can involve loss in many different ways) and the severity of depression, and Reynolds and Brewin (1999) found few differences in the nature of intrusive memories in a comparison between patients with clinical depression and PTSD. To this end, we propose the term *traumatic loss reaction* to acknowledge the importance of forms of extreme loss other than bereavement.

4. Anger

The literatures concerning the emotional sequelae of extreme loss- and extreme threat-related events are substantial. However, discussion of similar issues concerning the other two negative, basic emotions of anger and disgust, is almost non-existent. In the case of anger, there are

compelling reasons to focus attention on its pathological manifestations. For example, at least 2 million women are battered by spouses or intimate acquaintances each year in the United States, most frequently in anger (Straus & Gelles, 1986). In addition, the consensus among researchers is that high levels of anger are related to incidence of coronary heart disease, even after controlling for traditional biomedical indices such as smoking and serum cholesterol levels (e.g. Suarez & Williams, 1989). In diagnostic terms, within the DSM-IV, anger is listed as a contributing factor to a number of disorders including PTSD. These include dysthymia, paranoid and borderline personality disorders and high blood pressure and coronary heart disease. However, despite this evidence that anger is a clinically relevant problem, there is a significant lack of diagnostic categories within the DSM that have anger as the defining or principal feature, with perhaps the only plausible candidate being intermittent explosive disorder (APA, 1994). This contrasts markedly with the 20 Axis I and II disorders in the DSM-IV that have anxiety and/or depressed mood as the central feature. Although cases can and have been made for a range of anger disorders being included in the DSM (Eckhardt & Deffenbacher, 1995), the present argument will be limited to the possibility of a form of anger-related psychopathology that possesses family resemblance to both PTSD and to what we have called traumatic loss reactions.

As already noted, anger difficulties are seen as a part of the posttraumatic reaction in DSM. Increased irritability is listed under Criterion D of PTSD as a symptom of hyperarousal, and individuals with PTSD often describe extreme anger at any agent(s) responsible for the traumatic event (Novaco & Chemtob, 2002). Such anger is always, by definition, seen as a concomitant of the fear reactions that characterize the disorder. However, by applying the two-component classification scheme developed here, one can argue for a constellation of disordered reactions in which anger is the principal or defining emotional response to a major life event. Such sequelae would be likely to be present following events that had led to extreme, unresolved and persistent discrepancies along the appraisal dimensions associated with anger in the normal-emotion literature.

There is some disagreement over the fine details of the appraisal parameters involved in anger (Averill, 1982; Lazarus, 1991; Power & Dalgleish, 1997; Scherer, 1999). However, there is broad consensus that the central themes comprise appraisals of blocked goals, a recognizable agent doing the blocking, and also a moral dimension such that blocking is appraised as arising through deliberation or negligence on the part of the agent (see Table 1).

It is useful to illustrate the present argument with a brief case example. One of the authors (T.D.) assessed the following case involving anger-related traumatic events that appeared to involve irresolvable discrepancies within the relevant appraisal parameters:

The case of A.

A. was a taxi driver who was involved in a motor vehicle accident where he was on the receiving end of a rear-end shunt while waiting stationary at some traffic signals. A. had not seen the other car coming and developed what at first appeared to be a relatively minor back injury but later turned out to be a serious career-ending back problem. At the time of the event, A. reported that he had felt extreme anger at the driver of the other vehicle. He exited from his own vehicle and had to be restrained from physically attacking the other driver. He

reported little anxiety at the time of the event as he had received no warning of its imminent occurrence. Subsequent to the event, A. was unable to return to work due to his back problems—a situation that he could not come to terms with and that elicited considerable existential affect such as disbelief and horror. A. re-experienced the accident frequently in the form of dreams, intrusive thoughts and images and very occasional flashbacks. These re-experiencing phenomena were associated with extreme anger that would then be taken out on the people and property in his daily surroundings. For this reason, A. endeavored to avoid reminders of the event or talking and thinking about it. Eventually A.'s anger difficulties led to the break-up of his marriage and to the loss of many of his friends. A. reported that he had always had a quick temper but that the severity and extent of his anger in the aftermath of the event was shocking to him.

If we consider the case of A. in terms of the two-fold classification scheme proposed here, there is again evidence of the emotion-non-specific component of re-experiencing and avoidance of the anger-provoking event, which we would argue relate to the discrepancy between the event (and in particular, its severe consequences) and the victims pre-event representations concerning the world and self; for example, that such an event could not happen to him. In addition, there are emotion-specific components of extreme anger at the time of the event, anger when the event is re-experienced and concomitants of anger including marked irritability, sleep and concentration problems, and hypervigilance for the agent responsible for the event. Such levels of anger are not unusual in cases of PTSD. However, in PTSD, although the sufferer is angry at individual(s) appraised as responsible for the setting event, the event itself was the source of intense fear (APA, 1994). In contrast, A. reported that his fear/anxiety at the time of the event was mild, relative to the anger that he had felt. In addition, he reported little anxiety on re-experiencing the event at later dates. It could be argued that the anger was masking the feelings of fear in some way. However, this seems unlikely as there was little objective threat at the time of the event.

The proposal is that, akin to the cases of PTSD and traumatic loss, there is a form of psychopathology that can be conceptualized in terms of the mental system persistently failing to resolve extreme discrepancies between existing mental representations and event-related information along the appraisal dimensions associated with anger. The preliminary proposal is therefore for some form of traumatic anger reaction. As with both PTSD and traumatic loss reactions, the emotion-non-specific component consists of patterns of intrusion and avoidance, alongside existential affect, and the emotion-specific component comprises anger at the time of the event, chronic physiological concomitants of anger (cf. hyperarousal in PTSD), and anger in response to re-experiencing the event.

As noted above, the concept of the existence of a range of anger disorders to complement the anxiety-based and affective disorders is not new. Eckhardt and Deffenbacher (1995) have proposed a detailed classification based on extensive clinical experience of anger problems and including situational anger disorders, anger adjustment disorders, and generalized anger disorders, though with no reference to a form of traumatic anger reaction, akin to that proposed here. The thrust of the present thesis is clearly not to propose a complete taxonomy of anger-based psychopathology but rather to highlight a particular putative type of anger-related disorder. Of note, however, is the overlap between the type of setting circumstances outlined in

the current proposal and of the types of clinical problems outlined by Eckhardt and Deffenbacher (1995) in their justification of a concept of adjustment disorder with angry mood; for example, in response to a divorce in which the other person has been unfaithful. This overlap gives further support to the proposal that anger-problems of this kind have some validity in the clinic.

5. Disgust

The emotion of disgust, while being generally regarded as one of the negative, basic emotions (Ekman, 1992; Oatley & Johnson-Laird, 1987; Power & Dalgleish, 1997), has historically had little currency in the literature on emotions and emotional disorders (Phillips, Senior, Fahy, & David, 1998). Recently, this situation has begun to change (McNally, 2002) and the 1990s and early 21st century have seen a proliferation of research into disgust and its relationship to various forms of psychopathology such as unipolar (Power & Dalgleish, 1997) and bipolar depression (Harmer, Grayson, & Goodwin, 2002), obsessive–compulsive disorder (Phillips et al., 2000; Shapira et al., 2003; Sprengelmayer et al., 1997; Stein, Liu, Shapira, & Goodman, 2001), phobias (Davey, 1994; Davey, Forster, & Mayhew, 1993; de Jong, Peters, & Vanderhallen, 2002); and eating disorders (Davey, Buckland, Tantow, & Dallos, 1998; Troop, Murphy, Bramon, & Treasure, in press). In this section, we present the opening arguments in the case for a discrepancy-based disorder of disgust in response to intensely disgusting events.

A discrepancy-based disorder of disgust would be expected to have a number of symptoms based on the twofold analysis presented so far. The emotion-specific component of the disorder would involve: a discrete event that invoked intense feelings of disgust; disgust at reminders of the event; and physiological concomitants of disgust such as nausea and vomiting, as well as scanning for signs of contamination or dirt. The emotion-non-specific component would involve intrusive re-experiencing of the event and avoidance of reminders of the event, alongside existential affect concerning the extreme discrepancy between the event-representation and pre-existing structures. Following a disgust-based event, it would be anticipated that such avoidance might include problems with eating, avoidance of contamination and an excessive concern with cleanliness (see de Silva & Marks, 1999).

Some of the earliest examples of such disgust-based problems are described by the British psychiatrist W.H.R. Rivers (1918, 1920) who pioneered the treatment of shell shock and trauma in victims from the Great War and who is celebrated in the novel *Regeneration* by Pat Barker. For example, Rivers (1920) describes the case of a young officer whom he treated:

> Such a case is that of a young officer who was flung down by the explosion of a shell so that his face struck the distended abdomen of a German several days dead, the impact of his fall rupturing the swollen corpse. Before he lost consciousness the patient had clearly realized his situation, and knew that the substance which filled his mouth and produced the most horrible sensations of taste and smell was derived from the decomposed entrails of the enemy. When he came to himself he vomited profusely (p. 192).

Rivers goes on to describe a range of re-experiencing phenomena that the officer suffers. These include nightmares, flashbacks and intrusive thoughts and images, often associated with

vomiting. Furthermore, the officer often avoided eating and refused to discuss or acknowledge his trauma.

The case described by Rivers seems to be a clear illustration of re-experiencing and avoidance symptoms following a disgust–related trauma. The initial trauma had undoubtedly invoked extreme disgust reactions and the intrusion and avoidance symptoms revolved around the emotion of disgust. As with the concept of what we have called traumatic anger reactions, it is useful to illustrate the argument with some contemporary case examples. The first patient was a 13 year-old boy (D.)[2] who was eating a gateau in his kitchen:

> D. put some of the gateau in his mouth without looking at it and felt something in his mouth. D. thought that it was a nut as the gateau had nuts in it and started chewing on the object. However, he then pulled it out of his mouth and saw that it was a large black fingernail that looked burnt. D. immediately felt sick and vomited. He felt feverish and ill and went to bed. When talking about the incident at assessment, D. said that his stomach felt "funny" and at the time of the incident D. reported that he felt dirty. A few hours after going to bed, D. had got up and washed all over. Following the incident, D. kept seeing images of taking the nail out of his mouth and looking at it. He had felt sick several more times that evening. D. found it difficult to sleep that night and avoided food for the rest of the day. When he tried to eat he felt sick.
>
> In the 16 months post-event, D. had the same image of the nail every time he ate. His stomach frequently felt funny and he did not want to eat. He would not eat any prepackaged or manufactured food. D. had lost a lot of weight. D. had nightmares about the event for the first month and used to wake up sweating. D. had become increasingly irritable with his parents and had stopped seeing his friends.

The second case was an emergency service worker who had to deal with a badly decomposed corpse:

> P. had been called out to investigate concerns for the welfare of a man who had not been seen by his neighbours for several weeks. On forcibly entering the man's property, P. was met by a swarm of flies and an overwhelming smell of decomposing flesh. P. located the rotting remains of the man in one of the bedrooms. He had committed suicide by means of a gunshot to the head some weeks earlier. P. had to spend the majority of the day at the premises coordinating the forensic investigation and the removal of the body. She felt intensely disgusted throughout this period and was physically sick several times.
>
> Following this incident, P. developed serious psychological problems and was diagnosed with PTSD by her general practitioner and referred for cognitive-behavioural therapy (with the first author). P. had nightmares about the incident and would wake up feeling sick and occasionally needing to vomit. She experienced intrusive thoughts and images and felt disgusted at reminders such as being near the location of the man's property. P. tried to avoid anything that would remind her of the event. She left her job, refused to talk about the event, and tried not to think about it. She also became very concerned with cleanliness. She was

[2] Our gratitude to Derek Bolton who was the clinical assessor in this case.

always cleaning the house, worried constantly about dirt on her children, would not go near any bins, and was phobic of flies. Her feelings of disgust spread to certain foodstuffs and she lost a great deal of weight. She also could not bear strong organic smells such as the cat food for her pets and the animals ended up being destroyed. P. was horrified about the effect the event had had on her life and could not believe or accept it. She made several (in the end unsuccessful) attempts to return to work and could not cope with the possibility that her career might be over. She had dealt with many bodies in the past, some in poor condition, and had never been previously bothered.

As with the case described by Rivers, both D. and P. had experienced traumatic incidents centered on the emotion of disgust in which the representations of the events were discrepant either from pre-existing world representations concerning hygiene and contamination (P. and D.) or from self-representations concerning the person's ability to cope (in the case of P.). The sequelae of the events included the emotion–non-specific symptoms of re-experiencing phenomena and avoidance behavior such as not eating, allied with the emotion-specific experience of disgust at the time of the event and as a response to re-experiencing the event. The disgust was marked to the extent that both patients were often physically sick. In the case of P., the emotion-non-specific symptom of existential affect was also present. This was not assessed in the case of D.

In all three of the cases presented above, the individuals concerned experienced clinically significant impairment in everyday functioning and so, as with the previous cases of PTSD, traumatic loss and traumatic anger reactions, the argument here is for a specific form of posttraumatic psychopathology centered on the emotion of disgust.

Pathological reactions that involve relatively pure emotional experiences of disgust may be relatively uncommon in the clinic. However, complex emotions allied to self-disgust (Power & Dalgleish, 1997), in particular, shame and guilt, are frequently implicated in posttraumatic stress reactions, especially following sexual abuse or assault (e.g. Andrews, Brewin, Rose, & Kirk, 2000; Feiring, Taska, & Lewis, 1996, 1998; Lee, Scragg, & Turner, 2001; Leskela, Dieperink, & Thuras, 2002; Stone, 1992; Wong & Cook, 1992), but also in combat veterans (Hazeltine, 1997) and this aspect of self-disgust is an area that is attracting increasing interest from both clinicians and researchers (see Tangney, 1995, for reviews). Of most relevance here is the proposal by Lee et al. (2001) for 'shame-based' and 'guilt-based' presentations of PTSD, both of which fit convincingly within the present heuristic of emotion-specific and emotion-non-specific components of 'PTSD-like' psychopathologies. Lee et al. (2001) present case examples where the primary emotional reactions are shame and/or guilt which are allied with the characteristic pattern of intrusions and avoidance.

6. Discussion

The starting point of the arguments presented in this paper was that PTSD can be usefully deconstructed, in a theoretically driven manner, into two sets of symptom components. First, those emotion-non-specific components that are a function of the mental apparatus persistently failing to resolve an extreme discrepancy between trauma-related information and pre-existing

mental representations, and secondly, those emotion-specific components that are a function of the nature of the original event and how it is appraised. In the case of PTSD, it has been argued that the emotion-specific components focus on the emotion of fear.

Drawing on cognitive theories of normal-emotion, this argument was then extended to the other negative, basic emotions of sadness, anger and disgust and a to-be-answered-case was made for a localized taxonomy of discrepancy-driven psychopathology. Although the present paper has focused on discrepancies involving negative so-called basic emotions (Ekman, 1992), this does not preclude the possibility that extreme, unresolved discrepancies between new information and extant mental representations along the appraisal dimensions associated with more complex emotions can give rise to emotional disorder. For example, as already noted, a case has been made for sub-types of PTSD that center on the emotions of shame or guilt (e.g. Lee et al., 2001).

The analysis presented here has been derived from both a theoretical model of PTSD (the SPAARS model; Dalgleish, 2004) and from theoretical ideas from the literature on normal-emotions. There are a number of reasons why the arguments presented are more than just a theoretical exercise. First, it is important to seek to understand the underlying nature of the relationship between normal experiences of emotion and so-called emotional disorder in order that we might improve clinical–psychological and societal approaches to mental health problems. The existing psychological literature is replete with theories of psychopathology on the one hand and theories of normal-emotion on the other. Very rarely do these two theoretical streams converge (Dalgleish, 2004). This somewhat dissociated theoretical approach in the broad domain of emotion serves to reinforce the notion that emotional disorder is something very different to everyday emotional experience. The present argument, in contrast, tries to suggest that one way of thinking about emotional disorder is to take the generation of normal-emotion as a starting point and to consider how this process might break down in various ways (Berenbaum, Raghavan, Le, Vernon, & Gomez, 2003; Power & Dalgleish, 1997, 1999); in the present case, as a function of the mental system failing to resolve extreme discrepancies between different sets of mental representations.

The second reason why the present type of analysis is important is that the types of psychopathology outlined in this paper, of traumatic loss and of posttraumatic reactions centered on the emotions of anger and disgust, can be as potentially disabling as PTSD (see also Lee et al., 2001, for a discussion of this with respect to shame- and guilt-based variants). As these problems do not have the status of psychiatric disorder in the form of inclusion in the DSM, it is therefore important to highlight their existence. According to DSM-IV, a mental disorder is "a clinically significant behavioral or psychological syndrome or pattern that occurs in an individual and that is associated with present distress or disability or with a significantly increased risk of suffering death, pain, disability or an important loss of freedom" (p. 14; APA, 1994). There seems to be a strong argument that traumatic loss satisfies the DSM's theory-neutral definition of disorder (though there are some problems with the application of this criterion, see Wakefield, 1992). Bereavement, in the form of a major depressive episode, is already in the manual as a 'V code' condition (i.e. a condition that is not a disorder but is often the subject of clinical consultation) and there is gathering data for some form of pathological grief reaction to be included as a full-blown disorder in the DSM-V (Horowitz et al., 1997; Prigerson et al., 1999), with CG being included in the DSM-V field trials.

The cases for posttraumatic anger and disgust reactions seem less strong at the present time and the arguments presented here were intended to be preliminary. However, there is a growing case for greater diagnostic recognition of the clinical problems that anger can cause (Eckhardt & Deffenbacher, 1995) and the potential inclusion of these profiles of clinical problems as V-code conditions in the Manual is perhaps a question that deserves to be addressed.

The third reason why an analysis such as the present one is more than a theoretical or nosological exercise is that the treatment implications for the different types of discrepancy-based psychopathology that have been discussed are likely to be different. Both the anger case and the cases of D. and P. in the disgust section were referred for treatment with diagnoses of PTSD. Similarly, PTSD is often diagnosed following loss or bereavement (e.g. Prigerson et al., 1997). However, the normative treatment for PTSD of cognitive-behavior therapy with a high exposure element may not necessarily benefit individuals for whom the dominant emotions are not fear and anxiety (Foa & Rothbaum, 1998; Jaycox & Foa, 1996). For example, Pitman et al. (1991) describe six cases in which exposure therapy exacerbates posttraumatic stress reactions that are characterized by high levels of anger.

One possible key factor bearing on these treatment issues concerns the temporal perspective of different emotions surrounding a traumatic event and the implications that this has for the emotional processing of the event (Rachman, 1980) across the different PTSD-like presentations discussed. Fear—the predominant emotion associated with trauma—is essentially prospective. That is, it is usually about something negative that might happen in the future (it concerns a 'threat'). Repeated exposure to a traumatic memory involving fear will quickly reveal an absence of *future* threat concerning the event itself (because the event is in fact in the chronological past), thus allowing the fear directly associated with the event to dissipate. In contrast, emotions such as anger, disgust, shame and guilt are generally retrospective. That is, they are about something negative that has already happened. Repeated exposure to a traumatic memory involving these emotions may therefore run the risk of accentuating what was guilt-, shame- or anger-inducing about the original experience (Lee et al., 2001). Exposure therapy for non-fear-based variants of PTSD may therefore not be the ideal intervention. In other words, emotional processing (Rachman, 1980) may differ across different emotions. This is an issue that remains to be examined empirically.

In summary, in this paper, we have sought to propose a localized taxonomy of psychopathology driven by a theoretical analysis of PTSD in the context of the theoretical literature on normal-emotions. It has been suggested that there is a range of PTSD-like disorders that merit consideration by mental-health clinicians and researchers. It is further proposed that the method of conceptualizing emotional disorder, from the starting point of emotional order (Berenbaum et al., 2003; Power & Dalgleish, 1997), while not necessarily an appropriate basis for a diagnostic manual, is nevertheless a potentially fruitful approach to understanding further the underlying psychological nature of psychopathology and for the continued development of focused treatments.

7. Postscript

As this paper is part of a Festschrift to honour the career of John Teasdale, we would like to conclude with a brief personal appreciation of John and his work. John has led the way in

thinking about how normal cognitive and emotion processes can inform our understanding of emotional disorder, in particular depression. Both his theoretical and empirical work on this normal–clinical interface have transformed the way many of us think about our subject—giving rise to ideas such as those outlined in this paper. To have had such a pervasive influence on several generations of psychologists in this way is a considerable achievement. However, to have done so with such kindness, generosity and humility is truly special and provides a role model for us all to aspire to. Thank you John.

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