Behavioural and Cognitive Psychotherapy, 2005, 33, 423–441
Printed in the United Kingdom doi:10.1017/S1352465805002328

Understanding Posttraumatic Stress: Theory, Reflections, Context and Future

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Abstract. Exposure to a traumatic event may lead a person to experience posttraumatic stress. But there are wide individual differences in the severity and chronicity of reactions. Some people remain affected for considerable periods of time, but others are able to adjust relatively quickly, and some even go on to report experiencing positive personal changes as a result of experience of trauma. The psychosocial framework proposes that individual variation in response to trauma is attributable to the interaction between various personality and social psychological factors. This is a practical framework for formulation and for developing interventions with people who have problems adjusting to traumatic life experiences. In this paper we provide a retrospective account of the building of the psychosocial framework, and using case examples illustrate its use in formulation and developing intervention with individuals with varying difficulties. We also aim to look beyond this work in the past to subsequent developments and to future directions, in particular the new and emerging field of growth through adversity.

Keywords: PTSD, psychosocial, formulation, adversarial growth, posttraumatic growth, organismic valuing.

Introduction

We first came to the study of posttraumatic stress disorder (PTSD) when lawyers pursuing compensation claims on behalf of their clients, referred survivors of the Herald of Free Enterprise ferry disaster in 1987, and the Jupiter cruise ship sinking of 1988, to the Institute of Psychiatry, London, for assessment and psychological help. The fact that this happened at all is solely due to the vision, energy and enthusiasm of William Yule. Many would have shrunk from this task. Bill, as head of the clinical psychology service at the Maudsley Hospital, then a Special Health Authority, was able to respond with flexibility to this urgent need from survivors all over the country. We, along with a number of other clinical and research psychology staff, students, and trainees who also contributed to this undertaking over the subsequent years

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https://doi.org/10.1017/S1352465805002328 Published online by Cambridge University Press

(see Yule, 1999), began a systematic study, true to Bill's values as a clinical researcher of longstanding reputation, of how people adjust to traumatic events. The study of traumatic stress has come a long way since the late 1980s and it is a tribute to Bill's pioneering spirit that he was able to set out to chart the territory of this new field before it was fashionable.

Many survivors of the Herald and Jupiter took part in the various research studies we conducted over the following years. Through our clinical and research work with them we began to build up an understanding of how people adjust to threatening and traumatic events in their lives. This was essential for any therapeutic work but also, in retrospect, it may have been essential for ourselves. In developing our framework, we were doing our own work to make sense of the truly horrific and tragic stories the survivors told.

It is not our intention here to provide a review of the PTSD literature. Rather, we aim to provide a retrospective account of our work with William Yule, to describe the building of our psychosocial framework, and to demonstrate its use in planning interventions with individuals with varying difficulties. We also aim to look beyond this work in the past to subsequent developments and to future directions. In particular, the developments in positive psychology and the new field of adversarial growth.

Theoretical background

Looking back to 1987 when we first became involved in this field, the study of traumatic events was still in its infancy and we were among a very small handful of investigators in the UK interested in the topic. It had only been a few years earlier that the diagnosis of PTSD had been introduced in the third edition of the *Diagnostic and Statistical Manual (DSM-III)* of the American Psychiatric Association (1980), and little was yet known about the nature of this new syndrome. Indeed, the acronym PTSD was not in widespread use and was a term unfamiliar to most of our colleagues, rarely warranting much discussion in the major texts on clinical psychology.

In developing our framework, from the beginning, our approach was an integrative one, drawing on the existing literature on PTSD and our own different theoretical knowledge bases: the personality and social psychology literature on the one hand, and the cognitive and behavioural literatures on the other. This reflected our own backgrounds and interests at the time. Stephen, just graduated from the London School of Economics in social psychology and now beginning his PhD; Ruth, an established pioneer of cognitive therapy; and Bill, with his broad mix of interests and background in behavioural psychology.

In the social psychology literature of the time, Folkman and Lazarus had recently published empirical and theoretical work showing the central role of appraisal processes in understanding stress and coping (Folkman and Lazarus, 1980, 1985, 1988; Lazarus and Folkman, 1984). Although their focus was on more everyday stressful situations, it seemed to us that their theoretical work had potentially broad applicability and that the appraisal processes they described might also be central to understanding posttraumatic stress reactions.

Other work that influenced us was Taylor (1983) whose theory of cognitive adaptation to threatening events had developed out of her seminal work with women with cancer. Taylor also emphasized the important role of appraisal processes. The processes that Taylor described seemed appropriate to understanding the reactions of those survivors we were meeting. We were also influenced by Seligman and his colleague's theoretical work on learned helplessness and attributions (e.g. Abramson, Seligman and Teasdale, 1978; Peterson and Seligman, 1984;

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Seligman, 1975). Although focusing on depression, the processes described by Seligman and colleagues seemed to us to provide at least a partial understanding of posttraumatic stress, again emphasizing the role of appraisal processes, and in particular the role of causal attributions and explanatory style (see, Joseph, Yule and Williams, 1993).

Thus, although the role of appraisal was not yet well understood in relation to the diagnostic category of PTSD, it was central to understanding human reaction in relation to other life events and psychological conditions. We were of the view that these other literatures, although not concerned with PTSD per se, were of relevance to understanding how people adjust to more traumatic events. Although this seems self-evident today it was not so at the time to many given the DSM-III-R event criterion for PTSD which was: "The person has experienced an event that is outside the range of usual human experience and that would be markedly distressing to almost anyone . . . ." (American Psychiatric Association, 1987). The emphasis in DSM-III-R on the universality of reactions appeared to downplay subjective appraisal, and thus our emphasis on subjective appraisal processes was controversial.

We were also influenced by others who were also taking a broadly similar social psychological approach to us, in particular the work of Solomon, Mikulincer, and their colleagues (e.g. Solomon, Mikulincer and Avitzur, 1988; Solomon, Mikulincer and Benbenishty, 1989; Solomon, Mikulincer and Hobfoll, 1986). The building research evidence from their studies showed that those people who reported having higher levels of social support tended to be the ones who were least distressed and most able to cope with their experiences. Most importantly, Solomon and her colleagues had begun to investigate the interaction of event factors, personality factors, and social support, in predicting outcome, showing that, for example, the relation between personality and outcome was dependent on the intensity of the traumatic experience.

From the behavioural literature, we were influenced by the work of Rachman and in particular his thoughtful reflections about the process of therapeutic change. Rachman's (1980) concept of emotional processing provided us with a useful theoretical framework for conceptualizing the psychological reactions of survivors, and which we thought was highly relevant to understanding PTSD. In a discussion that aimed to link a variety of phenomena such as reactions to disturbing events, nightmares, obsessions and abnormal grief, Rachman suggested that emotional processing results in emotional reactions being "absorbed" so that exposure to the problematic cue no longer elicits a strong emotional reaction. Rachman pointed to various factors that give rise to difficulties in emotional processing:

- stimulus variables, which promote or inhibit ease of processing of a potentially traumatic event, both at the time and subsequently.
- cognitive processes, at the time of the event and subsequently in the post event environment, possibly influenced by prior experiences and attitudes.
- emotional factors, both type and intensity at the time and subsequently.
- behavioural factors, activity at the time and subsequently.
- social factors; responses and interventions from others that might facilitate or inhibit processing.

From the cognitive perspective we drew upon the theory of Beck (1976) who was at the time successfully developing treatment protocols for common mental disorders and who explained emotional difficulties using an appraisal framework similar to Lazarus but also

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incorporating a developmental perspective, positing childhood origins for disturbances in appraisal in later life. Perhaps most centrally relevant from a cognitive perspective, however, was the work of Horowitz, who had been very influential in the introduction of PTSD as a new psychiatric nosological entity. He had also developed more fully than anyone else to date a dynamic theory of change to account for adaptations over time, which was both descriptive of the process of developing a maladaptive condition and highly relevant to understanding of therapeutic interventions. Horowitz (1986), for example, describes how people work through their experiences in terms of a tension between intrusive and avoidant states.

Horowitz, like Beck, takes as his starting point that all individuals have a set of cognitive structures or schema in which assumptions about the world and themselves are embedded. He describes a sequence in which immediately after a traumatic event people experience a period of stunned confusion, followed by an overload of information relating to the trauma in the form of thoughts, images, and memories. As a result of these distressing thoughts and images, defence mechanisms are utilized in order to keep the intrusive recollections out of consciousness. This is thought to result in alternating states of avoidance and intrusion. However, the completion tendency acts to keep the trauma-related stimuli in active memory. As a consequence, the person fluctuates between periods of intrusion and avoidance until the new trauma-related information becomes integrated into the individual's schema. Horowitz's approach therefore was broadly similar to that of Rachman, insofar as both proposed that the individual has a need to process the new information.

The social psychologist Janoff-Bulman (1985) had also written extensively on the same theme giving examples of the type of information that trauma presents and how the new trauma-related information is incompatible with pre-existing assumptions. When faced with this shocking incongruity between prior-assumptions and the new trauma-related information, peoples' assumptions may be shattered. They are therefore faced with the formidable cognitive task of rebuilding an assumptive world (Janoff-Bulman, 1992).

Taking Horowitz's information processing approach to understanding people's responses to trauma leads us to conceptualize the phenomena characteristic of PTSD not as indicative of pathology, but as indicative of normal cognitive processes, echoing Rachman's (1980) concept of emotional processing, which may be prolonged or blocked. Thus, although the term PTSD had served to provide a common language for clinicians and researchers in this new field of study, we became wary of the use of the term "disorder" with its attendant implications of abnormal processes.

For this reason we generally tried to use the term "posttraumatic stress" as opposed to "post-traumatic stress disorder" to indicate that although we are referring to the phenomena of distressing intrusive thoughts, images, and pictures accompanied by the need to avoid these distressing emotions, thoughts, and reminders, we considered these to be normal reactions experienced by people in response to stressful and traumatic situations, indicative of need for cognitive-emotional processing, rather than an abnormal state of mind. In this sense we wanted to avoid the term "disorder" with the attendant implications of medical model pathology. This was particularly so in the language we used with our clients. We emphasize, however, that there can be wide individual differences in the intensity of posttraumatic stress reactions. The reactions can sometimes become severe and chronic causing significant problems in living, but this is the result of normal processes rather than through malfunction or illness. As we shall go on to show, we think that the processes are normal and processing can become blocked or impeded in a number of ways to produce a dysfunctional and distressed state.

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A psychosocial approach to posttraumatic stress

Thus, from the existing literature, three theoretical principles emerged: that subjective appraisal was central, that posttraumatic stress could be understood as resulting from normal rather than abnormal processes, and that various psychosocial factors served to impede or promote processing. In practical terms our task was to develop a framework based on these three theoretical principles within which to guide our therapeutic work with survivors.

Subjective appraisal

Subjective appraisal provided the foundation stone of our psychosocial theoretical framework. Of course, although there are individual differences in appraisal, some events are appraised in the same way by almost everyone. As we have seen, earlier definitions of what constituted a traumatic event emphasized the unusualness of the event (American Psychiatric Association, 1980, 1987). It was events such as major disasters involving massive death and destruction that were mostly studied and which thus disguised the importance of subjective appraisal. Research, in demonstrating the role of factors other than exposure to an unusual event, led to a new understanding of posttraumatic stress, which came to be reflected in the revised criteria in DSM-IV that were introduced by the American Psychiatric Association (1994). The authors of the DSM-IV reformulated criterion A (of both Acute Stress Disorder and PTSD) to include: (1) exposure to a traumatic event coupled with (2) the person's reaction to it. With the changing definition of what constituted trauma individual variability in subjective appraisal became more obvious and widely accepted.

Normal process

Having established the central role of subjective appraisal, we posited that the phenomena characteristic of posttraumatic stress, i.e. re-experiencing, avoidance, and arousal phenomena, are indicative of the need for cognitive-emotional processing of the new trauma-related information. The term cognitive-emotional processing refers to the process of changing emotions and appraisals, experienced over time, through the recollection of key aspects of the traumatic experience with full emotional engagement and arousal.

In our growing integrative approach we began to understand cognitive-emotional processing as a normal rather than abnormal process within the framework of evolutionary psychology (Tooby and Cosmides, 1990). The immediate cognitive features of posttraumatic stress, such as hyperalertness, excessive startle responses, and focused concentration can be seen as derivative of a special "survival mode" of functioning. Such reactions are likely to be adaptive in dangerous situations as they enable the person to react quickly to threat, thus increasing the chance of survival. From an evolutionary perspective, therefore, the features of posttraumatic stress are seen as adaptive responses to dangerous situations allowing the individual to react quickly to threat and thus physiological arousal might be considered to be a normal and adaptive reaction (Chemtob, Roitblat, Hamada, Carlson and Twentyman, 1988).

However, it was less certain why intrusive and avoidant experiences subsequent to trauma should be prevalent. One mechanism that we thought explained the persistence of these reactions in the time subsequent to the traumatic event was described by Brown and Kulik (1977) as flashbulb memory (see Wright and Gaskell, 1992). Brown and Kulik argued that there is a special mechanism that exists for encoding emotion-laden memories. Such a mechanism would have evolutionary survival value. Flashbulb memories might enable the organism to

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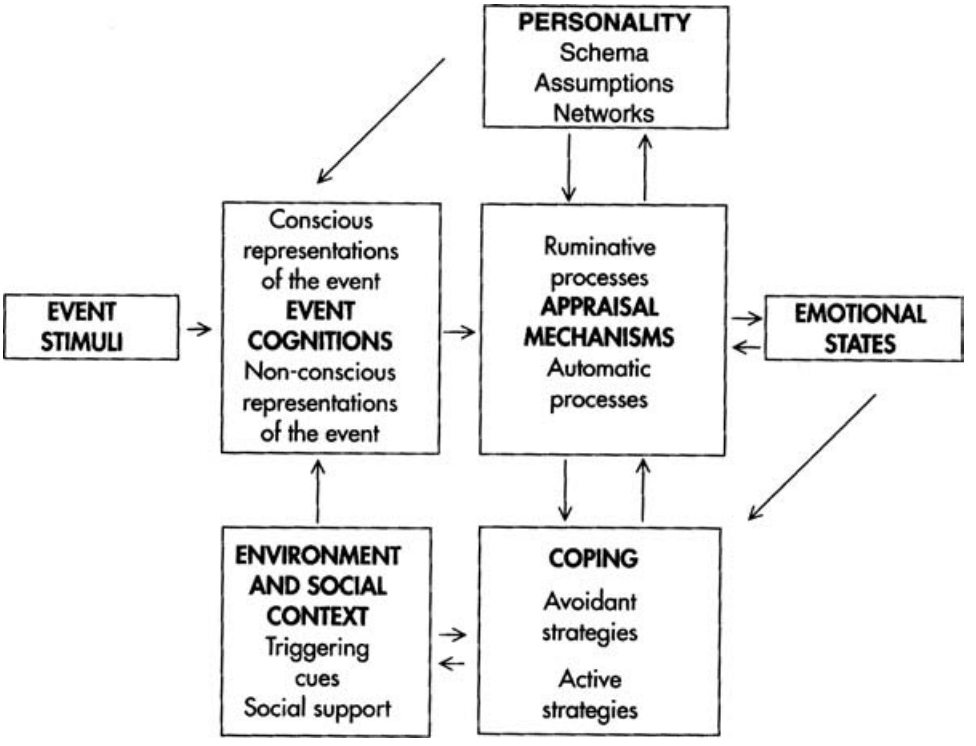


Figure 1. Psychosocial model of postraumatic stress reactions (from Joseph, Williams and Yule, 1997; Williams and Joseph, 1999)

learn quickly about threat in the environment without having to undergo repeated exposure to the stimulus, e.g. if a lion jumps out suddenly and our ancestor was able to escape from the lion, having learnt from that one experience to stay away from lions in future. Such a mechanism of encoding emotional laden information might help to account for the re-experiencing phenomena.

Evolutionary forces have therefore selected for the contents of discordant events to remain in "active memory" until the new trauma-related information is integrated within schema, with the driver for integration being the development of a new schema that is more in line with the objective facts of the external world. Evolutionary theory was thus consistent with our developing psychosocial framework and added support to the conception of the processes we had outlined as being normal. The evolutionary approach goes further in suggesting that responses to trauma have positive functions that are adaptive to the species' survival.

Personality and social psychology factors

Building on this foundation, and as already noted above, our psychosocial framework then described how the interaction between psychological and social factors operates to impede or promote cognitive-emotional processing. It is a psychosocial framework because, although cognitive-emotional processing is an internal psychological experience, the speed and depth of cognitive-emotional processing is affected by personality and social psychological factors. The psychosocial components of the framework are presented in Figure 1.

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We suggested that a traumatic event presents an individual with stimulus information that, as appraised at the time, gives rise to extreme emotional arousal, interfering with immediate processing. Representations of these event stimuli are held in "active memory", due to the difficulty they present for easy assimilation with other stored representations. Processing can proceed at both the automatic and the consciously controllable levels (see Brewin, Dalgleish and Joseph, 1996). Thus, there may be unwelcome intrusive thoughts and images in the form of flashbacks and nightmares, indicative that the person has not yet successfully processed their traumatic memories. These intrusive thoughts and images can form the subject of further conscious cognitive appraisal activity (i.e. thinking about the information depicted and its further meanings, drawing upon past experience and prior assumptions).

From the evolutionary psychology perspective we suggested that cognitive appraisal is driven by the need to develop realistic appraisals of the person-environment situation. But, because information is limited and cognitive appraisal is influenced by past experience, prior assumptions, and personality, it will be the case that appraisals are not always in line with the objectively available facts.

The occurrence of cognitive appraisals and re-appraisals may be associated with distressing emotional states, such as fear, anger, guilt and shame. The occurrence of these cognitive and emotional states will lead to various states of coping, as the person tries to manage their emotional states and make sense of their experience. There are a variety of ways of coping but ultimately all coping activity functions either to promote cognitive-emotional processing, or impede it. An important component of coping will be the seeking of social support from the environment.

One of the variables that interested us has been a person's attitude to emotional expression. The ease with which an individual can permit the expression of emotion we hypothesized to be important to allow the processing of traumatic information. Since the level of affect involved in trauma is very high, individuals may need the support of others, either professionals or those close to them, in allowing themselves to remember and talk about a trauma.

In-put from others can interact via appraisal processes to influence the individual's meaning attributions, emotional states, memory structures and coping in a helpful or harmful manner. Trauma-related emotions may be so strong as to be distressing and worrying for others to witness. Attempts to prematurely terminate exposure to trauma material, by reassuring the survivor or advising them to "put it behind you" may only act to promote avoidance and delay full resolution of the trauma, as well as to reinforce a survivor's sense of social alienation.

Our view was that the significance of each set of factors may differ between individuals and explain individual variation as well as group similarities. In our framework, individual variation is attributable to a complex interaction between components that constitute variables that may contribute to outcomes at different points in time (see also Foa and Rothbaum, 1998). The framework offered us a way of integrating research findings and pointed the way to multivariate research, which may investigate the patterns of interrelationships.

Research evidence

Armed with these theoretical perspectives we embarked upon a series of studies that began to build a body of evidence for the role of a variety of personality and social psychological factors, showing that, for example, higher levels of posttraumatic stress were found in those survivors who made guilt or shame provoking causal attributions (Joseph, Brewin, Yule and Williams, 1991, 1993), who had negative attitudes towards emotional expression (Joseph et al., 1997;

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Williams, Hodgkinson, Joseph and Yule, 1995), who reported less satisfactory crisis support (Dalgleish, Joseph, Thrasher, Tranah and Yule, 1996; Joseph, Andrews, Williams and Yule, 1992; Joseph, Williams and Yule, 1992; Joseph, Yule, Williams and Andrews, 1993; Joseph, Yule, Williams and Hodgkinson, 1994), and who experienced more intrusive and avoidant states previously (Joseph et al., 1996; Joseph, Yule and Williams, 1994, 1995; Williams, Joseph and Yule, 1994).

We also investigated the relation of posttraumatic stress to grief processes (Hodgkinson, Joseph, Yule and Williams, 1995), the experience of viewing human remains (Hodgkinson, Joseph, Yule and Williams, 1993), substance use (Joseph, Williams, Yule and Hodgkinson, 1993), impulsivity (Joseph, Dalgleish, Thrasher and Yule, 1997), and survivor guilt (Joseph, Hodgkinson, Yule and Williams, 1993). We also conducted various psychometric work, for example into the structure of posttraumatic stress reactions (Joseph, Williams, Yule and Walker, 1992; Joseph, Yule, Williams and Hodgkinson, 1993; Yule, Ten Bruggencate and Joseph, 1994) (see, Dalgleish, Joseph and Yule, 2000 for a review).

Our research also began to study positive psychological changes in survivors of the Jupiter cruise ship sinking and found very high endorsement of positive changes in outlook (Joseph, Williams and Yule, 1993). The findings from our research programme were consistent with the emerging international research, which also provided evidence that the effects of traumatic events are mediated and moderated by a variety of personality and social psychological factors (see e.g. Joseph, Williams and Yule, 1995, 1997, for reviews).

We were early into this field at a time when little experimental research had been done. Thus, we needed to attempt to map out the landscape into which further research could place the details, as indeed has since happened. In particular, there has been substantial further theoretical work by Ehlers and Clark (2000) on the cognitive underpinnings of PTSD, and a wealth of high quality empirical evidence has accumulated testifying to the central role of appraisal processes (Bryant, Mayou, Wiggs, Ehlers and Stores, 2004; Dunmore, Clark and Ehlers, 1997, 1999, 2001; Ehlers et al., 1998; Ehlers, Maercker and Boos, 2000; Ehlers, Mayou and Bryant, 1998, 2003; Ehlers and Steil, 1995; Halligan, Michael, Clark and Ehlers, 2003). (For recent reviews, see Brewin and Holmes, 2003; Dalgleish, 2004).

Therapeutic strategies guided by psychosocial theory

From a therapeutic perspective the framework delineates phenomenological components of individual experience that may be valuable to analyse and offers points at which therapeutic intervention can be addressed. As mentioned above, different components of the processes may be more or less significant at different times in the process. We would argue that the schematic nature of the framework makes it applicable to a wide range of posttraumatic states, varying in severity and intensity and not just to individuals diagnosed with PTSD. This is arguably useful in service settings with unselected patients.

Formulation and intervention

The psychosocial framework remains a useful guide to formulating clients' problems. For example, we might begin by asking about the client's social context (see Figure 1). We find out that in the early stages social support was present for the person but because they did not actively seek out social support and let others know how they were feeling, the social

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support fell away over time. Now, they feel unsupported. In asking about coping, we find that as a result of feeling unsupported they have turned to alcohol as a way of coping with their distressing emotions. As a short- term form of avoidance this seems to have been helpful to the person in dealing with their painful feelings in the absence of social support, but it seems also to have served to block the person from engaging in appraisal of what the event means to them. The choice of intervention strategy can therefore be determined by the therapist's formulation of the role played by each component, or in other words what the most significant blocks to processing are at any time. Having identified the blocks to processing the task is to collaborate with the client in developing targeted interventions. In this case, for example, we might consider an intervention to help the person develop their social support.

We emphasize that peoples' reactions to trauma are idiosyncratic, and the framework is therefore useful for clinicians to develop their understanding of each client. In this section we now wish to give some brief examples of our use of the psychosocial framework to formulate and develop interventions specific to the client.

Case 1

A middle-aged man survived a major transport disaster in which his escape from the vehicle was almost miraculous involving many near death experiences, and sights of dead victims. He lost his car and, being self-employed, was unable to maintain his business. When seen in connection with his compensation claim, he was largely unoccupied at home, drinking heavily and having angry disputes with his partner, who was not involved in the accident but who herself was suffering emotional distress, having endured the ordeal of waiting for news of her partner and subsequently the change in him, which she felt unable to comprehend. In fact the partner could be described as having been vicariously traumatized by the involvement of her spouse in the disaster and the subsequent media coverage. The survivor reports continually reliving the ordeal, sleeping very little and using alcohol to manage the emotional distress.

Formulation. This example could be formulated in terms of a person flooded by unmanageable recollections and the emotions associated, using insufficient or inappropriate avoidance or dosing strategies that would enable processing of the experience and whose social environment did not provide a context in which he could gradually make sense of the trauma. Indeed, the spouse was also in significant distress, requiring some help in her own right. Thus for the index patient, intrusions/emotional distress is significantly elevated, the coping/activity variable is notably deficient, and the social environment is potentially alienating.

Treatment. The initial goals for treatment might then address managing the person's distress, improving functioning and communication between partners, before beginning to help the survivor process the memories. This initial stage of treatment might be achieved by providing both partners with information about the effects of trauma and engaging them in a process of helping the survivor to manage the recollections, before gradually beginning to make sense of them. Initial treatment strategies might involve reducing emotional arousal and increasing a sense of control over the intrusions by introducing relaxation techniques (and possibly using adjunctive medication) and planning graded activity, which is both distracting and meaningful towards re-establishing self-esteem and confidence. Physical exercise might be useful for this purpose. With increased understanding of his posttraumatic experience, more control over the recollections and more normal functioning, the survivor might start to process the memories.

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Writing down what happened and tracking his escape with a model of the vehicle could aid with this. Particular emotive incidents within the trauma could be looked at in detail and appraisals examined for validity and helpfulness.

Case 2

A young woman reports recurrent intrusive recollections, emotional arousal and avoidance behaviour 2 years after an accident in which her young son suffered severe burns and needed prolonged and painful treatment She felt she 'had to be brave' during the period in which her son was near death and needing her support and cannot understand how she can be having such difficulties now that the trauma is over. She hates herself for being emotional. She thinks it is 'weak' to show emotions and consequently avoids all triggers to such emotion, such as reminders of the accident, including the site of the accident, hospitals and portrayals of hospitals on TV. She also tries to keep herself occupied as much as she can to avoid the memories. She has a supportive family but is unable to confide in them the real nature of her distress.

Formulation. This case example can be formulated principally in terms of excessive avoidance behaviour blocking processing of traumatic information. Negative attitudes to emotional expression, which may have pre-existed the trauma, contribute to motivating this avoidance behaviour. The mother's protective attitude to her son may also contribute to her neglect of her own emotional state, but this could also be impeding her son's ability to process his own traumatic experiences. Her social environment appears to be potentially helpful but she is unable to access this support. Negative attitudes to expressing emotion appear involved in this avoidance and may also be part of the whole family's approach to dealing with feelings. Thus, intrusions are relatively low but emotional arousal is high. Coping is not maladaptive in type but is being employed too consistently to allow intervals for the individual to process her experiences.

Treatment. The initial goal in treatment might then be to facilitate emotional expression in therapy and perhaps also in the social environment. The objective might be to identify and question the patient's assumptions about emotional expression. This might be achieved through education about the functions of emotion and the consequences of emotional suppression, particularly in relation to the processing of traumatic experiences. The role of emotional suppression in generating ongoing symptoms might then be understood. Attitudes to emotion before the accident and held by the family and other potential carers might need exploration. The patient would be encouraged to test out the consequences of allowing emotion to be expressed, both by observing others and by experiments with the therapist and with trusted friends or family. In this case, unblocking the expression of emotion might be the only therapeutic task necessary. Once the patient has a greater understanding of her post trauma response and the function of avoidance, she might herself be able to draw on the support in her social environment in processing. She might indeed feel able to proceed to talk about her feelings with her son and also explore his own feelings. Such communication could herald a deepening relationship between them, a positive consequence of their shared trauma. However, a therapist might also need to see the son with the patient to both assess their communication and the son's own state.

These two examples show how, with careful and systematic formulation using the psychosocial framework, it is possible to identify areas of clients' lives that are serving to impede processing, and areas where processing may be facilitated.

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Reflections, context and future directions

In the final section of this paper, we aim to reflect upon the psychosocial framework, which we began to study under Bill's guidance and support, in light of subsequent work, and to consider the implications for future directions. Our work in developing our understanding of reactions to trauma and our focus on the role of appraisal processes was part of the more general march of cognitive approaches within psychology in the last decades of the 20th century and one that continues to this day. Clinically, our framework remains a useful guide to formulation. It is important to understand the appraisal processes of the client, and how these influence, and are influenced by, personality and social psychological factors. In identifying factors that are potentially modifiable we can work to facilitate cognitive-emotional processing.

The topic of trauma has since become one of the most widely researched in the field of psychology. We now know so much more about the effects of trauma than when we first became interested, and subsequent research into the effects of trauma has further developed our theoretical understanding, filling in the gaps in our framework. This is not to say, however, that there no longer remains new territory for researchers and theoreticians to explore. The positive psychology movement has opened up new avenues for research.

Positive psychology

The prevalent view is that PTSD is a discontinuous psychiatric disorder indicative of abnormal functioning. We, however, tried to avoid the term "disorder" as applied to understanding people's responses to trauma. Our view was that the mechanisms underlying the development of posttraumatic stress could be understood as normal rather than abnormal processes. The experiences of intrusion, avoidance, and arousal were not "symptoms of a disorder", but simply indicative that processing of the new trauma-related information had become blocked or impeded. Thus, we instead refer to posttraumatic stress, and we adopted the view that the severity of posttraumatic stress could be conceptualized as lying on a continuum ranging from low to high. The point at which someone might be said to be suffering from the so called disorder of PTSD was an arbitrary one driven by various medical and legal needs rather than by good scientific rationale (Joseph, Williams and Yule, 1997). It is now becoming increasing common to question the medical model view that has come to permeate clinical psychology (e.g. Maddux, Snyder and Lopez, 2004), a move which we welcome. Accompanying this positive psychological perspective we are also seeing new ways of thinking about how people respond to trauma.

Growth through adversity

Originally, we developed the psychosocial framework for understanding the processes through which people adjust, adapt, and change subsequent to stressful and traumatic events. Most of our work was concerned with people in distress, but our observations also revealed that some survivors subsequently appeared to show positive changes in terms of appreciation of life and depth of engagement in relationships. As a result, we called for researchers to adopt a broader view that recognized that the experience of traumatic events can have positive as well as negative consequences (see Williams and Joseph, 1999). While there are those who, as we have seen, have continued to develop the lines of enquiry into PTSD (see e.g. Brewin and Holmes, 2003; Dalgleish, 2004; Ehlers and Clark, 2000; Ehlers et al., 2003), the observation

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that trauma can have positive as well as negative consequences has gathered momentum over the last few years as an independent avenue for research. There is now much theoretical and empirical work investigating the human capacity for growth through adversity as an alternative paradigm (see Linley and Joseph, 2005).

We were the first in this new field to develop a measure to assess positive changes, as well as negative changes, following adversity – the Changes in Outlook Questionnaire (Joseph, Williams and Yule, 1993). This is a 26-item self-report instrument assessing positive changes (e.g. "I value my relationships much more now"), and a 15-item scale assessing negative changes (e.g. "I don't look forward to the future anymore") (see Joseph et al., 2005, for recent psychometric review).

Psychosocial approaches to positive change emphasize the interaction between personality, cognitive appraisal, and coping activity (e.g. Armeli, Gunthert and Cohen, 2001; Linley and Joseph, 2004; O'Leary and Ickovics, 1995; Park, 1998; Schaefer and Moos, 1992; Tedeschi and Calhoun, 1995, 2004a, 2004b; Waysman et al., 2001). Whereas much of the previous literature on the effects of traumatic events has focused on the relationship between appraisal mechanisms and emotional states, understanding positive growth processes involves a shift of focus to the relation between appraisal mechanisms and personality/assumptive world (see Figure 1). Growth is not about changes in emotional well being, although positive emotional states will often follow in the wake of growth processes (Linley and Joseph, 2004), but rather it is about changes in personality – how people develop a new and more positive assumptive world.

Such positive changes have since been reported following a wide range of stressful and traumatic events (Linley and Joseph, 2004; Tedeschi, Park and Calhoun, 1998). The positive changes that are observed following these events have been variously labelled as posttraumatic growth (Tedeschi and Calhoun, 1995, 1996, 2004a, 2004b), stress-related growth (Park, Cohen and Murch, 1996), perceived benefits (McMillen and Fisher, 1998), and thriving (Abraido-Lanza, Guier and Colon, 1998) and, most recently, adversarial growth (Linley and Joseph, 2004). The term adversarial growth refers to the conflictual tension between the new trauma-related information and pre-existing assumptive worlds, and how the need to resolve this conflictual tension can serve as the springboard to positive changes following a range of adverse events. The description of this process is developed in the organismic valuing theory of growth through adversity.

Organismic valuing theory

As already mentioned, one unique aspect of our approach was our emphasis on posttraumatic stress as indicative of normal rather than abnormal processes, and on adaptation rather than psychopathology. Building on this work, and drawing on humanistic psychology (Rogers, 1959, 1963), Joseph and Linley (in press) have begun to integrate these ideas more explicitly into a positive psychology model, the organismic valuing theory of growth through adversity. This new theory is consistent with the three theoretical principles of our psychosocial model, and builds upon the new positive psychology literature to provide a more detailed theoretical account of the relationship between appraisal processes and personality.

In brief, organismic theory posits that human beings are active, growth-oriented organisms. They are naturally inclined to cognitively accommodate their psychological experiences into a unified sense of self, and realistic view of the world. The process of cognitive accommodation

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is such that the person's assumptive world is rebuilt in light of their experiences. This is in contrast to the process of cognitive assimilation where the person appraises their experiences in such a way as to be consistent with their assumptive world. Growth, by definition, requires accommodation rather than assimilation.

However, although the theory says that people are intrinsically motivated toward accommodation, the theory posits that extrinsic social-environmental forces can usurp this process leading the person to assimilate rather than accommodate. For example, within the social psychology literature there is much work on how victims will often self-blame inappropriately in order to maintain their sense of the world as just and controllable (see Joseph, 1999). As social support influences appraisal processes, it can therefore facilitate or impede the process of accommodation. In this example, insofar as others in the social network are concerned with maintaining their own assumptive world as just and controllable, they may in their attempts to be supportive inadvertently impede accommodation, leading the person to assimilate their experience.

Thus, the organismic valuing theory of growth through adversity posits an intrinsic motivation toward cognitive accommodation of the new trauma-related information. Cognitive accommodation processes require changes in meaning as significance, and this can be in either a negative or a positive direction. A person can accommodate new trauma-related information, for example, that random events happen in the world and that bad things can happen at any time, in one of two ways. This accommodation may be made in a negative direction (e.g. a depressogenic reaction of hopelessness and helplessness), or in a positive direction of meaning as significance (e.g. that life is to be lived more in the here and now). It is thought that it is human nature to be intrinsically motivated towards a positive accommodation of the new trauma-related information as opposed to a negative accommodation, insofar as an evolutionary psychology approach would suggest that this should be more adaptive. As Christopher (2004) more recently points out, in describing a theory that extensively fills out the biological aspects of reactions to trauma, from an evolutionary point of view trauma breaks up culturally acquired attitudes and creates the possibility of new meanings and more adaptive responses to the environment.

In this theory, the states of intrusion and avoidance are characteristic of cognitive-emotional processing following trauma, and will diminish to the extent that the new trauma-related information is either accommodated or assimilated. Thus, three cognitive outcomes to the psychological resolution of trauma-related difficulties are therefore posited. First, that experiences can be assimilated (i.e. return to pretrauma baseline); second, that experiences can be accommodated in a negative direction (i.e. psychopathology); and third, that experiences can be accommodated in a positive direction (i.e. growth). As an analogy, imagine a person picking up the pieces of a shattered vase. He or she can attempt to put the vase back together exactly as it was (assimilation), but now the vase is more fragile, covered in fractures and held together with sticking tape. Alternatively, the pieces can be discarded and placed in the trash (negative accommodation) or used to build something new, perhaps part of a beautiful mosaic (positive accommodation).

The possibility of the three cognitive outcomes helps to resolve the question of why it is that previously traumatized people often appear to be more vulnerable rather than more resistant to the effects of future stressful and traumatic events. We expect that attempts at assimilation rather than accommodation are most common in practice. People who assimilate their experience thus maintain their pre-event assumptions despite the evidence

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to the contrary, and thus would be expected to develop more rigid defenses, which in turn leaves them at increased vulnerability for future development of posttraumatic stress.

This shift in emphasis to a broader theory of growth through adversity also serves to highlight that one of the puzzles of cognitive-behavioural approaches to common emotional problems, apart from posttraumatic stress, is the absence of specific therapeutic attention to a "critical event". The organismic growth theory ascribes importance to a triggering proximal event, which is conceived of as providing information inconsistent with key assumptions that the individual may have learned in childhood relating to their needs to function. For example, a perfectionist may make an error that leads him to feel incompetent; a person highly invested in relationships may experience a rejection that leads them to feel unloved and unlovable. These processes appear to have much in common with the responses to trauma discussed in this paper and indeed it is common for people to use the term "traumatic" to describe events such as relationship breakdowns, bereavements, or moving house. Although developed here to provide a framework for understanding traumatic stress-related processes, organismic valuing theory might therefore also provide a broader framework for understanding a variety of psychological conditions.

There are a number of new avenues for research that develop out of the organismic growth theory. In particular, there is a need to test the prediction that people are intrinsically motivated toward cognitive accommodation rather than assimilation, and that intrinsic motivation is toward positive rather than negative accommodation. There is also a need to investigate the role of personality and social psychological factors and how they may operate to impede or to facilitate the process of positive accommodation.

Conclusions

In this paper, we have taken the opportunity to reflect upon the work we did with William Yule, in building an integrative psychosocial framework and testing some of our hypotheses. In building our framework, we attempted to integrate cognitive and behavioural models and social psychology. As spelled out above, this choice was driven by our own prejudices, by the existing literature, and also by our observations, which started with a chronically symptomatic group of survivors, where the impact upon relationships was very palpable. The need to consider the social network and social support of the index survivor was very evident. Professor Yule's long-term interest in families and children was a part of this too. Perhaps it was also informed by experiences as clinicians in hard pressed National Health Services, where the prospects of individual therapy for all was hopelessly unrealistic and yet the needs of some of the survivors we saw were very pressing. The need to mobilize resources in the community seemed as urgent as developing expert therapeutic models. In contrast to a more individualistic and purely cognitive approach to trauma, we were ever conscious therefore of the importance of the social context and the role of social support.

Looking back, the ideas that our work in the psychology of traumatic stress led us towards have had some resonance in other contemporary and ongoing theoretical and research work. Ultimately, it is a tribute to Bill's leadership and confidence in seizing an important opportunity that these developments have occurred. The personal benefits of understanding trauma have been positive for us both in many ways. This is the challenge that trauma presents us with: to find the new positive meanings in events that shock and destroy our old assumptions.

https://doi.org/10.1017/S1352465805002328 Published online by Cambridge University Press

Acknowledgements

Grateful thanks to Tim Dalgleish and an anonymous reviewer for their helpful comments on an earlier version of this paper.

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