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Understanding trauma-related stress in relation to the self

by

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<u>ABSTRACT</u>

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UNDERSTANDING TRAUMA-RELATED STRESS IN RELATION TO THE SELF

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Trauma and trauma-related stress disorders are extremely prevalent in today's society with a prevalence rate of 50-75% (Green et al., 2016). In combination with a rising survivor rate from the ongoing war on terror, trauma-related stress disorders are weighing heavily on the NHS and other treatment centres. With this in mind, the research herein evaluated ways in which an individual might be more resistant to traumatic experiences, and whether treatment and recovery rates of trauma suffers could be improved.

The theoretical approach used as the framework for this research was based in a psychological field which has grown out of health and medicine. This framework included the salutogenic approach as outlined by Aaron Antonovsky (1987), and is a view of understanding human health in terms of overall wellbeing and not selective pathology. In addition, the theories from the positive psychology movement, resilience research, and posttraumatic growth were utilized to better understand health, wellbeing, and thriving.

Out of these theories, much discourse has developed on the benefits of a healthy, robust sense of self. The research conducted in this thesis has applied aspects of these theories utilizing the self and its attributes as a crucial protective factor for health and wellbeing. More specifically, the concept of a robust sense of self was constructed as a holistic "defence" against the negative effects of trauma-related stress. This model was tested through two experimental design studies. One to test how different inherent levels of sense of self protect against a trauma analogue, and the other to test how a positive imagery manipulation could act as an additional protective factor when facing traumatic experiences.

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DECLARATION OF AUTHORSHIP

I, Krislyn Gayle McWilliams-Biles

declare that the thesis entitled *Understanding Trauma-Related Stress in Relation to the Self* and the work presented in the thesis are both my own, and have been generated by me as the result of my own original research. I confirm that:

- this work was done wholly or mainly while in candidature for a research degree at this University;
- where any part of this thesis has previously been submitted for a degree or any other qualification at this University or any other institution, this has been clearly stated;
- where I have consulted the published work of others, this is always clearly attributed;
- where I have quoted from the work of others, the source is always given. With the exception of such quotations, this thesis is entirely my own work;
- I have acknowledged all main sources of help;
- where the thesis is based on work done by myself jointly with others, I have made clear exactly what was done by others and what I have contributed myself;
- none of this work has been published before submission.

Signed:

Date: 06 February 2017

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Chapter 1: Introduction

The research investigated in this thesis was designed to investigate mechanisms involved in the maintenance of post-traumatic symptoms that might help us to improve current treatments of trauma and trauma-related stress. This was influenced by the growing prevalence rates in both civilian and military populations all over the world which is turning traumatic-stress into one of the leading mental health concerns. Green et al. (2016) paints a clear picture of the problem facing today's medical and psychological practitioners in their work, "Exposure to traumatic experiences is common" and has prevalence rates between 50-75% (p147). Exposure to these traumatic events is "linked to mental disorders, including posttraumatic stress disorder (PTSD)…[and] PTSD in turn, predicts negative health outcomes such as heart disease and impaired functioning" (Green et al., 2016, p. 147). Similarly, 68% of veterans from Operation Iraqi Freedom and Operation Enduring Freedom suffer from PTSD or other mental health disorders (Maestas, Benge, Pastorek, Lemaire, & Darrow, 2011). Thus, understanding trauma-related stress and the treatment of the symptoms of trauma-related stress have become a crucial part of psychological research and mental health research today.

A brief look at Trauma and the Self

The first step in this research was to understand what "traumas" are and what trauma-related stress symptoms entail. Benyakar, Kutz, Dasberg and Stern (1989) provide a glimpse into the historical definitions of trauma and discuss how these definition have moved from the more concrete definitions provided by the early Greeks toward definitions which have become more and more focused on the symptoms of trauma rather than on trauma as on object. This is true when you think of the most accepted theories into trauma and posttraumatic stress today by researchers such as Ehlers and Clark (2000) and Brewin and Holmes (2003). Although these works supply us with important theories into the mechanisms behind the effects of trauma and the maintaining factors of trauma symptomology, they do not provide a functional definition of the objective trauma itself.

In order to do this we return to the structural definition of trauma as detailed by Benyakar et al. (1989) who position trauma within the context of the "wounding" of the self through internal and external pressures, and provides a clear image of the trauma experience itself.

> "We define adult psychic trauma as the collapse of the structure of self…from an encounter of a catastrophic threat and a chaotic response. This occurs at a discrete point in time and results in the experience of loss of autonomy. This experience of loss of autonomy is incompatible with former recognized relationship that define the sense of self. Autonomy in humans… is the capacity to have a sense of identity, continuity and internal consistency in the face of relentless external and

internal pressure. The traumatic experience, once occurring, cannot be integrated into the structure of self and meaning, and hinders the continuation of autonomous functions of the structure. (Benyakar, Kutz, Dasberg, & Stern, 1989, p. 437)"

This definition of trauma highlights both the objective and subjective nature of trauma at the same time. Trauma is seen here as an objective "wounding" of the subjective "self" and creates total system dysfunction. This definition, thus, establishes the importance of a stable, consistent and autonomous self in a healthy individual in opposition to the "traumatized", unstable self found in an unhealthy individual. The importance of internal consistency and autonomy are recurring themes in developmental psychology and the psychology of wellbeing. Jean Piaget's (1952) hugely influential theories on child development included the role of the consistent self in creating "equilibrium" through the systems of "assimilation" and "accommodation". Likewise, Ryan and Deci's (2000) self-determination theory lists autonomy as one of the main constituents to maintaining motivation and wellbeing in our daily lives.

Benyakar et al. (1989) continue this idea stating that "to maintain wholeness in human systems is reflected in the capacity to have a sense of identity, continuity, and internal consistency in the face of a relentless external and internal pressure. This is an operational definition of autonomy in humans and it implies that the self, like all other structures, must be adaptable" (p. 434). Thus, the more adaptable, robust self creates a more stable sense of identity and internal consistency which has been found to lead to greater wellbeing and health (Carr, 2004; Hefferon & Boniwell, 2011; Kobau et al., 2011; Ryan & Deci, 2000; Seligman, 2002).

Similarly, returning to research into mechanism of the disorders caused by traumatic events, we see more references to the self. These studies into the treatment of PTSD and other trauma-related stress disorders often focus on the integration of the self which has been "wounded" by a traumatic experience. This dis-integration can be seen through symptoms such as flashbacks, loss of episodic memory, and disordered timelines surrounding the trauma (Ehlers & Clark, 2000). Similarly, treatment often includes work on resolving these errors in dis-integration and helping to restore internal consistency (Brewin, 2001; Bryant, Sutherland, & Guthrie, 2007; Conway & Pleydell-Pearce, 2000; Dalgleish, Rolfe, Golden, Dunn, & Barnard, 2008; Ehlers, 2010; Ehlers & Clark, 2000; Elwood, Hahn, Olatunji, & Williams, 2009). Furthermore, research into what maintains stress disorders often includes an individual's negative thoughts about one's self and feelings of helplessness (Ehlers, 2010; Ehlers & Clark, 2000; Elwood et al., 2009; Zetsche, Ehring, & Ehlers, 2009), while research into recovery often includes the internalizing of positive self-images and self-compassion (Bonanno, 2004; Glantz & Johnson, 2002; King, King, Fairbank, Keane, & Adams, 1998; Zetsche et al., 2009).

Thus, we have established that trauma and the self are inextricably entwined, and that one would not exist without the other. Indeed, nothing would be seen as "traumatic" if the self was not

in some way directly affected by the experience and thereby interpreting the event as "traumatic". Esther Giller (1999) discusses this highly subjective nature of the trauma experience, while Pearlman and Saakvitne (1995) note that trauma is determined by how "the individual experiences (subjectively) a threat to life, bodily integrity, or sanity" (p. 60). Thus, these definitions place trauma in the world of the "subjective experience". Indeed, the subjective manner in which individuals experience their traumas directly determines how they are ultimately affected by their trauma and research has shown that this is determined by the adaptable self (Benyakar et al., 1989; Nezlek & Plesko, 2001; Rosenberg, 1979; Tomaka, Morales-Monks, & Shamaley, 2013).

Jon Allen (1995) expands this idea, pointing out that there are two sides to a trauma, the objective as well as the subjective. "It is the subjective experience [by the self] of the objective events [the wounding] that constitutes the trauma…The more you believe you are endangered, the more traumatized you will be…Psychologically, the bottom line of trauma is overwhelming emotion and a feeling of utter helplessness. There may or may not be bodily injury, but psychological trauma is coupled with physiological upheaval that plays a leading role in the long-range effects" (p.14). Thus, it is important to remember again that the objective trauma itself cannot be separated from the subjective experience by the self when evaluating the severity of the symptomology and the duration of those symptoms (Allan, 1995; Benyakar et al., 1989; Ehlers & Clark, 2000; Elwood et al., 2009).

Theoretical Framework

Research into the treatment of stress disorders and the self often goes hand in hand with research into overall wellbeing and thriving. This is particularly true in the context of more recent movements in psychology that focus on the "health" and "wellness" of individuals rather than strictly on pathology. After World War II, Aaron Antonovsky conducted research with survivors of the holocaust and was interested in what factors had allowed for many of these survivors to maintain their mental and physical health in the face of the worst imaginable atrocities. Antonovsky referred to his work as "salutogenesis" from the Greek for "origins in health". He wanted to understand what qualities found in healthy individuals might work as protective factors against traumatic experiences.

Around this same time, Suzanne Kobasa was looking into the "hardiness" of people and Norman Garmezy was looking into what made children from deprived backgrounds excel against all odds. This work is often referred to as resilience psychology. Finally, in just the past couple of decades a more formalized movement encompassing many of these concepts came into the forefront known as positive psychology and was championed by the president of the American Psychological Association, Martin Seligman. This thesis used the theories of positive psychology, resilience, and salutogenesis as a way to position the research into trauma and the self as we were

interested in understanding what aspects of the self in healthy individuals are protective against traumatic experiences.

In addition, while investigating the literature in positive psychology and resilience on trauma there was a significant amount of literature related to growth out of trauma. The concepts around posttraumatic growth are not especially new, but recently it has developed as a field of study in its own right (Aldwin & Levenson, 2004; Calhoun & Tedeschi, 2013; Linley & Joseph, 2011; C. L. Park, Cohen, & Murch, 1996). Likewise, much of this research is based on the same idea of subjectively experiencing trauma that we have seen in the self and trauma research. Indeed, just as the trauma-related stress literature showed that not all traumatic events are experienced in the same way, posttraumatic growth theories emerged from the idea that not all traumatic stress is viewed negatively by the psyche and eventually by the individual (Aldwin & Levenson, 2004; Antonovsky, 1987; Calhoun & Tedeschi, 2013; Pals & McAdams, 2004; Zoellner, Karl, & Maercker, 2008).

In fact, posttraumatic growth (PTG), thriving, etc. is an aspect of the traumatic stress literature that reoccurs over and over and could not be ignored. Indeed, posttraumatic growth reinforces the doubled-edged, subjective nature of trauma, symptomology and recovery highlighting the fact that no individual views their trauma in the same way or recovers in the same way. Growth from trauma utilizes many of the same self-attribute strengths that help to combat trauma-related stress in combination with certain positive behavioural, emotional, and psychological coping skills. To be perceived as true "growth" or "thriving" one must reach a level of wellbeing which surpasses even pre-trauma levels (Calhoun & Tedeschi, 2013; Janoff-Bulman, 2004; Linley & Joseph, 2011).

Thesis Design

In this thesis, Chapter 2 introduces the theoretical frameworks of salutogenesis, positive psychology, and resilience psychology, and analyses their role in current psychological thinking. This is followed up by a discussion in Chapter 3 on the nature of the self and the benefits of the robust self. Indeed, it was important to understand what constitutes a healthy, robust self, and in order to do this, various attributes of the self were investigated in Chapter 3. These include but are not limited to self-esteem, self-concept clarity, sense of coherence, positive affect, self-compassion, positive self-images and good coping skills (Antonovsky, 1993; Campbell et al., 1996; C S Carver, Scheier, & Weintraub, 1989; Hulme, Hirsch, & Stopa, 2012; Lakey, Hirsch, Nelson, & Nsamenang, 2014; Rosenberg, 1979; Tomaka et al., 2013; Watson, Clark, & Tellegen, 1988). Also, as internal consistency and autobiographical memory integration were established above to be important to the healthy self, these concepts are also addressed briefly in Chapter 3.

Furthermore, many of the self-attributes such as high self-esteem, courage, meaningfulness, a stable self-concept, autonomy, self-determination, positive affect, emotionality, positive self-appraisals, lack of rumination, and strong social support have all been attributed to

promoting health, resilience to illness and stress, and quicker, more successful recoveries in the presence of many different types of traumas (Antonovsky, 1987; Campbell et al., 1996; Foa, Ehlers, Clark, Tolin, & Orsillo, 1999; Hart et al., 2006; Kobau et al., 2011; Padesky & Mooney, 2012; Seligman & Csikszentmihalyi, 2000; Watson, Clark, & Tellegen, 1988a). We wanted to investigate whether individuals with these robust self-attributes would be more protected from traumas and the resultant trauma-related stress, and potentially recover more quickly from the symptoms.

Chapter 4 of this thesis returns to a thorough discourse on trauma-related disorders, particularly posttraumatic stress disorder. The disorders that are known to develop from traumatic experiences range from temporary adjustment disorders and substance abuse to posttraumatic stress disorder and suicide (American Psychiatric Association, 2013). The release of the Diagnostic and Statistical Manual – 5 (DSM-5; 2013) regrouped trauma-related stress disorders to distinguish them from Anxiety Disorders under which they had previously been included. These traumatic stress disorders can range from mild to severe, and often are accompanied by comorbid disorders. This discussion is then followed up by a detailed literature review on the importance of recognizing the signs of growth and the mechanisms behind growth in Chapter 5.

In order to test whether certain self-attributes could protect individuals from traumatic experiences, two experimental studies are included in Chapters 6 and 7. Although all of the self-attributes listed above contribute to health and wellbeing, some of these attributes have been empirically tested and are found to be more easily measurable under experimental conditions. Thus, for these studies we focused on high self-esteem, stable self-concept clarity, stable sense of coherence, high resilience, high positive affect and low negative affect.

Furthermore, in the second study we added positive and negative imagery as additional experimental variables to see if they would benefit or impair the protective attributes. Studies have shown that positive imagery can reinforce the self through creating a positive working memory which enhances self-esteem while in contrast holding a negative self-image can inhibit positive self-regard through the blocking of positive memory retrieval and leading to a more negative view of oneself (Hulme et al., 2012; Stopa & Jenkins, 2007).

Within these studies a trauma analogue was used to induce temporary trauma symptomology such as flashbacks and intrusive thoughts. The analogue entailed observing a traumatic experience via a film clip (Weidmann, Conradi, Groger, Fehm, & Fydrich, 2009). Research has shown that observing traumas that are not happening directly to oneself can lead to significant stress, but usually has a much shorter symptom duration. The *Desk Reference to the Diagnostic Criteria from DSM-5* (2013) states in its criteria A that PTSD can occur through "Exposure to actual or threatened death, serious injury, or sexual violence in one (or more) of the following ways:" including the fourth criteria of "Experiencing repeated or extreme exposure to

aversive details of the traumatic event(s)" (p143). The DSM-5 allows for both the "witnessing" or even the "learning" of traumatic events to lead to profound distress. However, using a film clip as the trauma analogue does not meet the requirements for the risk of prolonged PTSD symptomology as a notation in the DSM-5 states, "Criterion A4 does not apply to exposure through electronic media, television, or pictures unless this exposure is work related" (p 144), making the film clip an excellent way to create immediate but not prolonged distress. Thus, in order to objectively test the subjective experience of trauma, these experimental studies were devised using the trauma analogue.

      In summary, the research undertaken in this thesis involves the detailed review of the literature on the role of the adaptable, robust self on individuals suffering from trauma-related stress symptoms utilizing the theoretical tools provided through positive psychology, salutogenesis, and resilience psychology. The research was conducted utilizing two empirical studies which would provide insight into different self-attributes that might lead to a reduction in traumatic symptoms and potentially aid in the daily treatment of individuals currently suffering from trauma-related stress.

Chapter 2:   Salutogenesis, Positive Psychology, and Resilience

In the late 70s and early 80s, there was a shift in the approach commonly utilized in medicine and psychology. After World War II, the overarching model for both medicine and psychology was a "pathological" model that showed man as a primarily healthy, well-organized, and stable organism with momentary lapses into non-health. Aaron Antonovsky coined the term, salutogenesis, for the new approach that would counter this pervasive view within health and psychology. Alongside other researchers such as Suzanne Kobasa (1979), Antonovsky (Antonovsky, 1979) proposed a model that was based in the idea that people live a highly stressful life that pushes them closer to ill-health or health depending on how "hardy" they are. Both Antonovsky and Kobasa suggested that it was not the pathogen that should be evaluated to determine how to treat "sick" people, but rather evaluate the "non-sick" person to see how they managed to avoid becoming "sick" from the same pathogens. Unfortunately, at this time, although important research was being conducted, this model did not become a mainstream movement.

After another couple of decades had passed, this idea of re-evaluating how the healthy individual remains healthy, again gained traction within the Positive psychology and Resilience movements. These two models viewed traditional models as lacking in understanding what made healthy people thrive and what made individuals that experience extreme stress and "deficits" remain healthy. Resilience work asked what was it about certain people that allowed them to overcome obstacles that a majority of others could not overcome and in many cases suffered terribly from. In addition, Positive psychology asked how healthy individuals utilized tools of emotional wellbeing and happiness to thrive in their lives and as a by-product seemingly ward off disease and stress.

It is not difficult to see how these theories complement and strengthen each other. Thus, I have tried to take the best aspects of each theory to support the work that has been conducted in this thesis. Below you will find a more detailed discussion of each approach and the most relevant concepts.

Salutogenesis

Salutogenesis is a view of health developed by Aaron Antonovsky (1979, 1987) after studying the resilience, coping, and thriving of survivors of the holocaust in Israel. Salutogenesis is a measure of the level of coping that places a person somewhere along an ease/disease continuum of health. With the view that humans are in a constant state of flux and that we face numerous and profound stressors on a regular basis, a person is then either more or less healthy based on their ability to deal with these stressors. These stressors as envisioned by Antonovsky (1979, 1987) are interchangeable with the term trauma as we have defined it previously (Benyakar et al., 1989; Giller, 1999; Pearlman & Saakvitne, 1995). Specifically, Antonovsky defined stress as "demands to

which there are no readily available or automatic adaptive responses" (1979, p. 72). Thus, Antonovsky (1979) also recognizes that the objective stressor is then evaluated by the subjective responses by the adaptive self.

Antonovsky (1979, 1987) maintains that when a person is on the "ease" end of the continuum they are healthier/coping better with stressors and when on the disease end of the continuum they are more unhealthy/coping badly with stressors. Antonovsky (1987) maintains that this ability to cope and to evaluate stress in one's life is based on one's sense of coherence (SOC), which is a type of view of one's self and one's world which mirrors the robust, adaptive self (Antonovsky, 1993; Benyakar et al., 1989; Campbell et al., 1996; Hart et al., 2006; Rosenberg, 1979).

Antonovsky's hypothesis was that the greater the integrity of one's sense of coherence, the better one would cope with stressors and the closer to the "ease" end of the continuum they would be. Antonovsky embraced the metaphor that man is not carefully walking along the river of life and from time to time falling in over his head, but rather suggests that we live in the river all the time and how well we cope with the river (how stable our sense of coherence) determines whether our heads go under or not. In summary, Antonovsky's salutogenesis seeks to understand the strengths and characteristics that allow man to face extreme stressors (such as traumas) and remain healthy.

Stressors

As mentioned previously, salutogenesis is the approach to health and wellbeing that views humans as existing on an "ease/disease" continuum and their current level of health as determined by which end of the continuum they are currently closer to (Antonovsky, 1979, 1987). Antonovsky maintained that this was largely due to life stressors. However, these stressors were not all implicitly "pathological risk factors", but instead should be viewed as opportunities for growth or as a "eustressor" (Antonovsky, 1987, p. 7). He argues that it is how a person responds to a stressor, or the *subjective experience* of that stressor, that actually determines the positive or negative implications. However, in and of itself, the stressor acts as a mobilizing factor and this has potential to be either a negative or a positive motivating force depending on how the individual experiences the stressor.

In his original analysis in *Health, Stress, and Coping* (1979), he explained in detail how "generalized resistance resources" (GRRs) were phenomena that were successful in combating stress. These phenomena could include money, ego strength, cultural stability, social supports, etc. In addition a GRR is defined as a phenomenon that "creates life experiences characterized by consistency, participation in shaping outcome, and an underload-overload balance" (Antonovsky, 1987, p. 28). Or in other words, GRRs allowed people to make sense out of the stressors that were a constant part of our lives. As a person successfully fended off stressors through these GRRs this would be a reinforcing factor and a person's sense of coherence (SOC) would grow. This idea of eustressors which build up our psychological resources has been referred to in similar research as

promoting "hardiness", "psychological preparedness", and "stress inoculation" (Hefferon & Boniwell, 2011; Kobasa, 1979), thus providing us with the "strength" to face future stressors.

In his later work, Antonovsky added (1987) "generalized resistance deficits" (GRDs) to this model creating what he called GRR-RDs. Here he conceptualizes yet another spectrum, this time of available resources that a person would have to approach any life situation. The higher on the GRR-RD end the more robust the SOC and the lower on the GRR-RD end, the less robust. In addition, in this later conceptualization, Antonovsky (1987) divides these GRR-RD stress/resources into three main types: chronic situations, major life events, and acute daily hassles.

A chronic life situation is one that is related to a long-term, enduring and pervasive situation such as one's historical context, culture, group membership, personality, or temperament. If the situation is more of a GRR (resource) then the SOC is strengthened and if it is a GRD (stressor) then the SOC is weakened. Antonovsky maintains that the chronic life situations are the "primary determinants of one's SOC level" (1987, p. 29).

However, much research on stress (Holmes & Rahe, 1967; Lazarus, 1984a) is focused on what Antonovsky calls the "major life events", or discrete incidents in time and space which may not be in themselves negative or even unexpected, but may lead to subsequent tensions. These stressors include death of a family member, addition of a family member, loss of job, retirement, or recognition of achievement, etc., and Antonovsky (1987) claims that it is one's level of SOC that determines whether sequelae are processed as positive, neutral or negative.

Finally, Antonovsky grudgingly acknowledges the existence of daily hassles, such as "failing a driving test, an unusual compliment or insult from one's boss, a minor accident to one's child" (1987, p. 30) and so forth. However, he does not consider them capable of altering one's SOC. Indeed, he makes a small argument that daily hassles are mostly just aspects of the chronic life situation that you are in, which as mentioned above is already the first and most important stressor/resource situation shaping one's life. I think that this is fundamentally sound, however, even though these daily hassles may not be enough to alter one's SOC, it would be important to understand the subjective weight of these hassles on a person when considering whether the person feels they are "drowning" or "swimming" in Antonovsky's "river of life" at any one moment in time.

Sense of Coherence

In the process of understanding the role of the GRR-RD in the lives of people, Antonovsky (1987) developed the concept of sense of coherence (SOC). He was convinced that the strength of one's SOC was developed through the successful interaction with GRR-RDs and that this would directly determine where one would stay on the "ease/disease" continuum, or in other words how healthy and resilient they remained. Antonovsky (1987) defined the SOC as "a global orientation that expresses the extent to which one has a pervasive, enduring though dynamic feeling of

confidence that (1) the stimuli deriving from one's internal and external environments in the course of living are structured, predictable, and explicable; (2) the resources are available to one to meet the demands posed by these stimuli, and (3) these demands are challenges, worthy of investment and engagement" (1987, p. 19). Or in simpler terms, Antonovsky claimed that a strong SOC required one to be high on three essential components: comprehensibility, manageability, and meaningfulness.

Antonovsky (1987) goes on to discuss these three core components of the SOC in detail. Comprehensibility is the idea that stimuli are cognitively understandable and under the proper circumstances are predictable. Thus, although a stimuli such as death may not be desirable it is possible for a person to make sense of it cognitively, and approach it as such. The second element, manageability, is defined as the belief by the person that there are adequate resources available to that person to address and if necessary overcome a new stimuli. Finally, Antonovsky (1987) describes meaningfulness as the most important component for a strong SOC, and it is marked by the motivation and willingness the person shows towards investing emotional energy into the stimuli. For example, viewing an aversive stimuli as a challenge worthy of time and effort, thereby imbuing it with importance and making the ability to overcome such stimuli that much more gratifying.

Antonovsky's early work was on Israeli survivors of concentration camps, particularly women (Antonovsky, 1987). While he was analysing this work, he reflected on the resilience of these survivors. He envisioned at that time that a strong SOC would include the three components as highly correlated and in essence making up one unifying resilience resource, however, later he decided that this was not always the case. It occurred to him that one might have different levels of each independent component, and that this would affect the way the world was perceived around one. For example, Antonovsky (1987) maintained that being high or low on all three components would create "a quite stable pattern, viewing the world as highly coherent or incoherent" (p. 20). This meant that a person who viewed their world as comprehensible, manageable, and meaningful would be stable and eager to meet the demands of life, while the one low in all three would be equally stable but apprehensive of the demands of life.

Antonovsky (1987) breaks down the remaining possible combinations of the three components to try and show how the different combinations would likely affect the way one would view one's world. He explains that it would be "rare" to have low comprehensibility and high manageability. This combination would be highly improbable because it would mean that a person lacked the required cognitions to determine the necessary resources demanded of a situation. Thus, the individual would not understand the situation well enough to determine whether the situation was truly manageable. Simply, if a person did not know that a spark and combustible materials were required to create fire, they would not likely see creating fire as a manageable task.

Finally he discusses how the last four combinations are driven by the meaningfulness component. Thus, where meaningfulness was high, the individual would feel compelled to find the resources necessary to understand and overcome challenges of value and in contrast would readily abandon situations that although are understandable and possibly surmountable, have no value. Antonovsky (1987) referred to this potential as "pressure to move up" or "move down". When meaningfulness was high there was pressure to move up or overcome, and when low, pressure to move down or abandon. Furthermore, Antonovsky (1987) utilized the stereotypical "housewife" to illustrate the category of high comprehensibility and manageability but low on meaningfulness as he felt that they were often in a situation that was "of consistency and a reasonable underload-overload balance, [but] does not provide the experience of participation in shaping outcome because one's potentials are ignored" (p. 20).

In this way, Antonovsky (1987) prioritises the three components to show that meaningfulness is the most important as this is what guides motivation to interact with a situation either positively or negatively. This is followed by comprehensibility as cognitive understanding is a necessary requirement for a situation to be evaluated as potentially manageable. However, the interplay of all three components is said to be required for successful coping to occur (Antonovsky, 1987). Table 2.1 shows how Antonovsky viewed the interrelatedness of the different components.

Table 2.1 *Dynamic Interrelatedness of the SOC Components*

Type	Component			Prediction
	Comprehensibility	Manageability	Meaningfulness	
1	High	High	High	Stable
2	Low	High	High	Rare
3	High	Low	High	Pressure to move up
4	Low	Low	High	Pressure to move up
5	High	High	Low	Pressure to move down
6	High	Low	Low	Pressure to move down
7	Low	High	Low	Rare
8	Low	Low	Low	Stable

Note. Taken from *Unravelling the Mystery of Health* by Aaron Antonovsky, 1987.

Measuring the SOC

In the Appendix of *Unravelling the Mystery of Health* (1987), Antonovsky published his original 29-item measure of sense of coherence. From this scale, a shorter form was later adapted with 13 items. The scale is meant to measure a global, stable orientation to life including the three main components of comprehensibility, manageability, and meaningfulness. In a meta-analysis of studies utilizing the SOC, Antonovsky (1993) maintains that it is important to remember that the overall score should be used to determine the strength of one's SOC and not to try to breakdown the measure into subscales based on the primary components. He asserts that trying to do this undermines the holistic nature of the sense of coherence. In addition, the scale has a number of

negatively worded statements that have to be reverse scored in order to achieve a final, total score of subjective sense of coherence.

In the meta-analysis (1993), the research on the SOC-13, which is used in the studies within this thesis, showed respectable reliability and validity. In particular, the meta-analysis shows the extent of its content and construct validity through a table listing numerous studies which correlate significantly to similar global concepts such as self-esteem, internal locus of control, and hardiness. Furthermore, it was significantly negatively correlated with concepts such as high anxiety, neuroticism, and perceived stress.

Coping and Health

In *Unravelling the Mystery of Health* (1987), Antonovsky addresses the issues of how the SOC relates to successful coping and maintaining health. One of the key features of his theory is the concept of flexibility, and this flexibility is exhibited in a number of different ways. The first way in which flexibility becomes an issue is under the concept of "boundaries". A healthy and strong SOC person is able to broaden or narrow their sphere of meaning to fit appropriate levels at any given time. Thus, when a stress is deemed to be outside of a meaningful boundary, such as the election of a disliked political figure in a neighbouring country, this can be overlooked as a non-stressor for the individual since this issue is outside of the individual's sphere of meaning. However, Antonovsky (1987) does limit the narrowing of one's boundaries to always include four main spheres: one's internal feelings, one's immediate interpersonal relations, one's major activity, and existential issues such as death, shortcomings, isolation, etc. The ability to widen or narrow what one considers meaningful helps aid in approaching and overcoming valued situations or disengaging from situations that one would probably never have the resources to overcome and do not actually need to be addressed anyway.

Antonovsky (1987) recognizes another issue of flexibility in the one main inherent flaw in the design of his measurement of the SOC. This flaw is the *rigid* or *inauthentic* vs. *strong* SOC. Whereas, he has maintained that the strong SOC is crucial to a healthy and well-developed person, the rigid/inauthentic SOC is the person who claims to be "too strong". It seemed unrealistic that a person would be *very strong* in every situation in every component of the SOC. Antonovsky viewed these as outliers and originally, just deleted these outliers from his research on concentration camp survivors (1987).

However, later he felt that it was important to understand what the characteristics of these rigid/inauthentic individuals were. Antonovsky (1987) found that the real difference between truly strong SOC people and rigid/inauthentic SOC people was once again the issue of flexibility. A person with a rigid SOC is so intent on fitting everything into their known life-schema that when posed with a stressor that directly conflicts this, they suffer a breakdown at the very base level of self and identity. Interestingly, later research by both Janoff-Bulman (2004) and Calhoun and Tedeschi (2013) into posttraumatic growth would base their theories in a similar schema-shattering

design. Contrastingly, a person with a legitimately strong SOC is capable of adapting their world view to accept and overcome these conflicting stressors. Antonovsky (1987) points out that many of these rigid SOCs are so convincing that it takes extensive qualitative research into each of these apparently "overly-strong" SOC people to determine if they are actually healthy individuals or whether they are instead weak SOC people in "sheep's clothing".

Finally, Antonovsky (1987) puts a great deal of time into discussing the relationship between the strong SOC and health. Here again, at the root of the argument, is flexibility and adaptability. He maintains that someone with a strong SOC will most likely have a large number of resources to choose from and the experience and knowledge of when to use the appropriate resource to manage each individual stress. Antonovsky makes the very clear distinction that it is not a specific set of coping strategies and behaviours that promotes health and wellbeing in an individual, but rather it is the ability to be flexible and adaptive in your choice of strategies and behaviours that guarantees a healthy resolution. The meta-analysis (1993) showing the significant correlations between a strong SOC and individually adaptive and beneficial coping strategies as well as wellbeing constructs supports his theoretical approach. Furthermore, the findings within this thesis also show significant correlations between a strong SOC and positive resources such as high self-esteem, self-concept clarity, and positive affect while negatively correlating with anxiety, perceived stress, and negative affect.

Context, culture, personality, and many other factors which are in just as much a state of flux as the stressor being confronted must be considered when putting forth the most successful coping strategy at any given time. Thus, Antonovsky (1987) claims that the difference between the strong SOC and the weak SOC is the ability to comprehend the situation, choose the appropriate coping strategy to make the situation manageable, and then determine if the situation is within the set boundaries of meaningfulness for that person in order for them to take action or not. It is at this point that the constant daily stressors with which one is bombarded become *irrelevant* or *benign* tensions that one can normally disregard or become chronic, chaotic, and insurmountable stressors that lead one to slip further down the disease end of the health spectrum.

Positive Psychology

History

After World War II there was a movement spearheaded by the creation of the Veterans Administration and the American Psychological Association to catalogue and formulize the diagnosis and treatment of mental illness. This approach lead to the creation of the Diagnostic and Statistical Manual and an elaborate coding and treatment schema within the science of psychology and psychiatry. And although this structure allowed for a better understand of the aetiology and prognosis of a number of previously ill-defined disorders, it also began to see psychology as merely the medicine of treating ailments and not as a broader science of the total human as it had once

tried to do (Carr, 2004; Seligman, 2002). In fact, in the very early days of psychology there was a mandate for psychology to fulfil three main goals: cure the mentally ill, enhance the lives of the everyday citizens, and to understand and promote genius level behaviours. Suddenly, psychology had found that in the process of obtaining the first goal the second two were put by the wayside (Carr, 2004; Hefferon & Boniwell, 2011; Seligman, 2002; Seligman & Csikszentmihalyi, 2000).

At the end of the 20th century and the beginning of the 21st century, after movements by researchers such as Antonovsky and Kobasa failed to launch a popular change in this method of approach, a shift was finally starting to take place. Research by respected members of the field such as Seligman, Frederickson, Carr, and Averill was forcing the re-evaluation of the accepted approach to psychology. In addition, Martin Seligman, acting as the newly appointed head of the American Psychological Association, was in a position to promote and enhance this new movement. Clinical psychology would need to move from a sole focus on pathology to a broader picture of health and wellbeing, and these would be the hallmarks of positive psychology.

Structure

Seligman in his introduction to *Authentic Happiness* (2002) points out that there are three main pillars of positive psychology: the understanding of (1) positive emotions, (2) positive personality traits, and (3) positive environmental support structures. It is his belief that the interaction of these qualities would not only help those who were depressed feel better, but also allow individuals who were doing well in life do even better. Seligman (2002) wrote that people would want to improve their lives from a "plus two to a plus seven" rather than just trying to improve already depressed states. In fact, it was the overarching goal of positive psychology not only to aid in the healing process of those who were ill but also to maximize the potential of every human being (Carr, 2004; Seligman, 2002; Seligman & Csikszentmihalyi, 2000) Similarly, a more recent look at positive psychology by Hefferon and Boniwell (2011) goes on to add that positive psychology is not only the research into what makes people happy and helps them to obtain subjective wellbeing but also into what makes a person and his/her community "flourish".

One of the fundamentals of positive psychology laid out by Seligman (2002) is the categorization of positive emotions into three main themes: past, present, and future related emotions. Emotions regarding the past include satisfaction, pride, and serenity. The future includes optimism and hope, and the present includes two distinct types of positive emotions: momentary pleasures and lasting gratification (Carr, 2004; Hefferon & Boniwell, 2011; Seligman, 2002). This is often depicted through the concepts of "hedonic" and "eudaimonic" wellbeing. Hedonic wellbeing is that which includes pleasant bodily sensations, high positive affect, low negative affect, and high subjective wellbeing. Eudaimonic wellbeing focuses more on the complex nature of gratifications gained from partaking in activities that play on one's on personal strengths and creates feelings of glee, bliss and comfort. In addition, these eudaimonic feelings are manifested in a sense of meaning and purpose in life (Carr, 2004; Hefferon & Boniwell, 2011). This ability to

achieve eudaimonic feelings of meaning is also important when considering Antonovsky's view that meaning is the pivotal motivating factor in deciding whether to take on a challenging stressor or to give in. Here we find that Seligman and other positive psychologists, without crediting salutogenesis directly, were formulating similar theories about the resilient properties of a meaning-driven life.

Criticism

Finally, while early positive psychologists such as Seligman focused on the optimization of happiness as key to health and wellbeing, more recent criticisms of positive psychology have asked whether "happiness" alone is enough (Hefferon & Boniwell, 2011). Hefferon and Boniwell (2011) cite the 10 most persuasive critics of the positive psychology movement in the past decade. Two of the most convincing arguments against the movement were made by Richard Lazarus (2003) who stated that it could potentially be dangerous to assume you can separate positive from negative without remembering that they are parts of a whole. Lazarus also criticized the unreliable methodology which had primarily been cross-sectional and rarely produced causal data.

As for Lazarus' first critique, I would agree with this to an extent, and refer back to the salutogenic description of the continuum of "ease/disease" to show that this distinction is not clear cut and that negative as well as positive stressors are a regular part of life. Furthermore, research into positive and negative affect recognizes that although each can be treated as independent constructs, there is an important interaction that should be regularly considered. To acknowledge this criticism does not diminish the effort of positive psychologists who are trying to look into how "positive emotions" optimize one's potential; rather, it instead enhances this effort by reminding researchers that it is essential to understand the entire range of emotions and stimuli that a person encounters.

The second critique based in methodology is one that focuses on the weaknesses of cross-sectional studies which tend to make up the bulk of the studies in positive psychology. However, Hefferon and Boniwell (2011) point out that a lack of strong causal research is a weakness in almost all realms of psychology, and that above and beyond that, they in particular would ask for a healthier balance of qualitative research to support better quality quantitative research. I would go on to say that it is research such as the research being conducted in this thesis that shows the most potential for empirical validity as it combines cross-sectional, quantitative, and qualitative studies. Thus, I would say this critique will fade as more and more studies are conducted using similar research designs.

Overall, positive psychology asks researchers to investigate ways in which positive thinking, emotions, and meaningfulness can promote health and optimal living. This also includes looking into the cases where even under a great deal of stress, some people maintain their health and wellbeing. Positive psychologists consider that understanding the reasons why someone stays

healthy to be an essential question, just as with the salutogenic approach (Antonovsky, 1987; Carr, 2004; Hefferon & Boniwell, 2011; Seligman, 2002; Seligman & Csikszentmihalyi, 2000). With so much focus on this question, a new area of research has emerged to answer it: resilience.

Resilience

Definitions

To say that resilience research has emerged in importance recently, is not to say that resilience research has not been around for some time now. In fact, the study of resilience has been on-going throughout the history of psychology, but it has played different roles and garnered different amounts of interest during this time (Glantz & Johnson, 2002; Hefferon & Boniwell, 2011). Some of the most influential research was conducted by Norman Garmezy as early as the 50's and 60's where schools were investigated to determine why certain students whose life situation would normally have predicted low outcomes were actually doing surprisingly well (Glantz & Johnson, 2002). In an interview with Jon Rolf, Garmezy defines resilience as "manifest competence despite exposure to significant stressors" (Glantz & Johnson, 2002, p. 7). Garmezy (Glantz & Johnson, 2002) goes on to say that you cannot really think of resilience without stress and that this is an important point. This was important to Garmezy as he felt that it was the child's ability to flourish in the presence of extremely deprived environments that defined the child as resilient, but this is also important on a broader scale as salutogenesis would agree that these stressors are an unavoidable part of life for some and how well the children confronted these stressors reflected their overall wellbeing.

Since this time, resilience research has become a broad field of study and is marked by its diversity. Defining resilience has become a difficult process and many different viewpoints exist on how to do so. Hefferon and Boniwell (2011) utilize Tugade et al.'s (2004) definition of resilience as "the flexibility in response to changing situational demands, and the ability to bounce back from negative emotional experiences" (p. 85). It is of interest for me, the use of the term "flexibility" by Tugade et al. and the importance that Antonovsky (1987) places on flexibility as being key to his theories on resilience and health maintenance. However, this is just one of many definitions, and for further discussion see the detailed work by Howard Kaplan in *Resilience and Development: Positive Life Adaptations* (as cited in Glantz & Johnson, 2002) where the key figures in resilience research are summarized and their definitions are deconstructed and analysed.

Although Kaplan's analysis can be somewhat abstract at time, one concept that he does try to clearly delineate is the idea that resilience can come down to one of two theoretical bases: that resilience is (1) the factor(s) that allow high-risk individuals to have good outcomes in the face of adversity or (2) the qualities of a person that maintain their health and wellbeing regardless of stressors. In the first sense, resilience is defined by the positive "outcome" and in the second case by the positive "cause" (as cited in Glantz & Johnson, 2002). Although these concepts are complex

and at first glance appear to be two ends of the same string, there is an appreciative difference in how you would operationalize these definitions.

Looking at the second definition more in depth, you will find that it fits the concepts of salutogenesis as described herein more closely than the first. In addition to the work by Antonovsky (1979, 1987), Kaplan credits Kobasa's (1979) work as equally supportive of this working definition. Just as with Antonovsky, Kobasa (1979) introduced her construct of "hardiness" as a protective factor or "causal" system which acts against falling prey to negative stressors, as in Kaplan's second formalization. Furthermore, just as with Antonovsky's salutogenesis, she introduced a tripartite construct that she referred to as: commitment, control, and challenge. When taken together a person would be able to feel competent enough to face the stressors in their life and feel confident and committed to overcoming the negatives and enhancing the positives (Kobasa, 1979).

Risk and Resilience Factors

Throughout resilience research, a large portion of work has been conducted in discovering "risk" factors for what might cause a person to be less resilient. This particular effort is more in line with Kaplan's first conceptualization of resilience, than with the salutogenic approach which focuses on what makes a person more resilient, but it has been highly prevalent in the research. Hefferon and Boniwell (2011) report a study from Werner and Smith (1993, 1996) that showed over a longitudinal period regular risk factors did emerge. These risk factors included: low birth weight, low socio-economic status, low maternal education, and an unstable family structure. Garmezy (as cigted in Glantz & Johnson, 2002) attributes accumulated stress from poverty as being one of the world's greatest risk factors for children, and argued that most other factors (poor family structure, lack of social support, dangerous school environments, etc.) are directly related to the state of poverty.

So if these are common risk factors, then what are common resilience factors? Hefferon and Boniwell (2011) explain that there are six main factors which provide for a more resilient individual: (1) the ability to reframe, (2) experiencing positive emotions, (3) participation in physical activities, (4) trusted social support, (5) the use of personal strengths, and (6) optimism. All of these would be considered by Antonovsky (1987) as GRRs, and allow for the strengthening of one's sense of coherence. In fact, Hefferon and Boniwell (2011) go on to discuss the salutogenic model in their section on resilience claiming that a strong SOC is essential to resilience for health and wellbeing. They report that SOC has been "linked to high associations with well-being and life satisfaction, reduced fatigue and loneliness…moreover, a strong SOC protects against depression, predicts low suicidal thoughts in depressed patients, and predicts lower (30%) mortality from all causes " (2011, p. 88). Similarly, one can see how positive psychologist would consider experiencing positive emotions and optimism as central to developing lasting meaningfulness.

Thus, we are able to come full circle and see that although distinct approaches, salutogenesis, positive psychology, and resilience are invariably intertwined, and with this in mind can be utilized holistically in the future.

Chapter 3: Characteristics of the Self

The Self

The literature surrounding the self is quick to point out that defining what the self remains an unbelievably complex question and is almost impossible to answer (Gallagher, 2013; Leary & Tangney, 2012). Leary and Tangney (2012) acknowledge that "not only have we lacked a single, universally accepted definition of 'self', but also many definitions clearly refer to distinctly different phenomena, and some uses of the term are difficult to grasp no matter what definition one applies" (p. 4). However, both *The Oxford Handbook of The Self* (Gallagher, 2013) and the *Handbook of Self and Identity* (Leary & Tangney, 2012) attempt to introduce an answer to this question with a historical lesson into the evolution of Western society's discourse concerning the "self". As this seems as good a place as any to start a discussion of such a complex concept, some of the major historical views are included here.

In some of the earliest discourse on the self, one looks to the Greeks (Gallagher, 2013). Although Plato, Socrates, and Aristotle all held slightly different conceptualizations of how the body and soul were related, what was key was the idea of the self as "soul". This idea of an ethereal soul that was somehow separate from, yet encased in, the body and contained the main life-force of the individual was crucial to their philosophies. Due to this, there was much debate about what happened to the soul upon death and whether it could separate from the body. Interestingly, Epicureanists and Stoics were quick to disregard the necessity of a soul, and believed that when death came for the body that was the end. They found no need to argue the separation of soul from body at death as other Greeks did. As they saw it, once the body died, that was the end and no one would know the difference anyway (Gallagher, 2013). However, the idea of a soul would be pervasive and long lasting in philosophy and science, and evolved over many centuries to accommodate many future Christian thinkers of the middle ages.

In the sixteenth- and seventeenth-century, with the rise in modern science and philosophy, there was an important shift in concepts of the self imbedded in a "soul" to the revelation of the important role of the mind to the self (Gallagher, 2013). Descartes was an essential part of this movement. He maintained that "sensation, perception, and imagination" (Gallagher, 2013, p. 39) came from the workings of the brain, while the "immaterial self" experiences these sensations and perceptions and then creates thoughts about them separate from the brain. This allowed him to accommodate science and soul together. However, with the influence of Newtonian Laws, and the need for empirical design, philosophers such as John Locke went one step further from the previous conceptualization of "soul" to a new idea of the self as a mental, conscious, thinking self manifested of the brain. Locke also maintained that the self was entirely intertwined with memory and the ability to think and "remember" oneself from one time point to another in a continuous way that recognizes the previous selves as inherently the same self as the current self (Gallagher, 2013).

By the eighteenth- and nineteenth-century, scientists and philosophers had completely rounded on the historical perceptions of the self and instead found the self illusory and unnecessary. David Hume and quite famously, Friedrich Nietzsche, made their arguments that the

self was merely a useful fiction that helped people to try and understand their role in the universe. Hume and Nietzsche both proposed additional possibilities for how the human mind and the human as an entity actually related to the world in novel ways foreign to current theorists of the time and would go on to influence generations of thinkers (Gallagher, 2013).

However, although men such as Hume and Nietzsche attacked traditional philosophical concepts on a large scale, other contemporaries were moving steadily into more scientific views of the self without abandoning the concept altogether. Developmental concepts of the self were on the rise in Germany and France, and Kant and Hegel were applauded for their theories. However, by the late nineteenth century it was Williams James (1890) who truly vaulted the self within psychology with his work, *The Principles of Psychology* (Gallagher, 2013; Leary & Tangney, 2012; Stopa, 2009).

William James focused an entire chapter of his book to "The Consciousness of Self" and the importance of the duality of the "personal self" (Gallagher, 2013). This duality came from James' acknowledgement that the self could be both the subject and object of thought, i.e. both the "knower" and the "known" (Gallagher, 2013; Stopa, 2009). This idea that the self could be both the subject and object of self-reflection becomes key to the definition of self provided by Leary and Tangney (2012) in their debate over the semantic difficulties of the word "self".

> If we dig down to the fundamental, essential quality that underlies all three of these uses of the term *self*, we arrive at the human capacity for *reflexive thinking* - the ability to take oneself as the object of one's attention and thought. Virtually all scholarly interest in the self involves, in one way or another, phenomena that involve this capacity for reflexive consciousness. (Leary & Tangney, 2012, p. 6)

In this way, modern day empirical, psychological reasoning is founded on James' (1890) idea that the self is "the incessant presence of two elements, an objective person, known by a passing subjective Thought" (as cited in Gallagher, 2013, p. 48).

Although James laid the foundations for the modern day psychological view of the self, the twentieth century researchers went on to view the self as an impossibly singular idea. The self could no longer be seen and understood as one unified concept with a single definition, even as complex as some of the earlier scholars had attempted to imagine it. As Leary and Tangney (2012) referenced above, although reflexive thought could be said to be involved in most of the *phenomena* of self, it is the plural nature of these phenomena which is worth noting. The self had become *e pluribus unum*, out of many, one, and this was the evolution of the "hyphenated" self (Gallagher, 2013; Leary & Tangney, 2012).

Leary and Tangney (2012) list over 50 hyphenated self terms in their *Handbook of Self and Identity* and consider five main distinct ways in which these terms are utilized: (1) as total person, (2) as personality, (3) as an experiencing subject, (4) as beliefs about oneself, and (5) as executive agent (Leary & Tangney, 2012, pp. 4–5). Firstly, they suggest the self as "total person" which is

more or less synonymous with "person" and is represented by terms such as "self-mutilation", "self-monitoring", and "self-defeating behaviour". Next is the self as "personality" or as Leary and Tangney (2012) cite Tesser (2002, p.185) the self is "a collection of abilities, temperament, goals, values, and preferences that distinguish one individual from another" (p. 4). They go on to say that this is how Maslow (1954) conceptualized his use of the term "self-actualization"; thus, the self-actualization of one's personality, goals, and values (Leary & Tangney, 2012).

The next formulation of self that Leary and Tangney (2012) describe is that which James (1890) first introduced as the "self-as-knower". He notes that many writers utilize this version of the self "to refer to the inner psychological entity that is the center or subject of a person's experience" (p. 5). In contrast, James (1890) also presented the "self-as-known" which Leary and Tangney (2012) refer to as the "beliefs about oneself" and are reflected in terms such as "self-enhancing", "self-verification", and "self-affirmation". Finally, Leary and Tangney (2012) discuss the "self as executive agent" that is the "decision maker and doer…that regulates people's behaviour" (p. 5). This conceptualization is seen in terms such as "self-control" and "self-regulation".

Leary and Tangney (2012) point out this semantic battle over the "true" nature of the term self is futile and some of the uses such as "person" and "personality" may actually be detrimental to the overall science of the self. However, these hyphenated selves were becoming more and more prolific to make up for the disjointed and varied universe of self research and could not be avoided. Gallaher (2013) takes on this issue as well when he asks the question:

> So where does that leave us? The notion of a unified self was introduced into scientific theory in the seventeenth century, particularly in the theories of Descartes and Locke, as a replacement for the notion of soul, which had fallen on hard times. But eventually the notion of a unified self fell onto hard times of its own. Its demise was gradual, but by the end of the twentieth century the unified self had died the death if not of a thousand qualifications, then of a thousand hyphenations. (Gallagher, 2013, p. 51)

Thus, through the history of the "self" we find the classical construct of the soul morphing through the enlightenment into a more empirically defined "self of the mind", but finally, meeting its end in the modern day acceptance of the diversity and complexity of many aspects of many selves. Nevertheless, even if the "self" has not withstood time and philosophy as a definable word it has not diminished it as a researchable construct, and instead has launched a multitude of highly organized and empirical areas of study within psychology, sociology, philosophy, biology, and neuroscience. Virtually no scientific field today is completely without some recognition of the importance of self-related phenomena.

Consequently, it is essential to investigate some of these specific self-related phenomena to see how they are relevant to the research conducted in this thesis and which self-phenomena are seen as particularly related to the protective, resilience factors that much of this research is based upon. Thus, we ask the question: "What is *sense of self*?" as portrayed in this research and why is it important?

Sense of Self

The sense of self as it is constructed in this thesis includes self-esteem, self-concept clarity, affect and sense of coherence. Over the years each of these areas of self-research have been studied independently or in relation to one or more of the others. After an extensive review of the literature on self-related constructs, it was decided that this combination best represented both state and trait aspects of the self for empirical study. Additionally, these individual constructs accounted for overlapping dimensions of meaningfulness, stability, and flexibility of the self providing for a more robust overall construct. Leary and Tangney (2003) write that "it is important to maintain the distinction between self-appraisals and self-esteem and to conceptualize self-appraisals as part of the self-concept that may or may not relate to global self-esteem" (p. 107). Thus, although these concepts are found to be highly correlated (Campbell et al., 1996; Kernis & Johnson, 1990; Leary & Tangney, 2012; Linley & Joseph, 2004; Pyszczynski, Greenberg, Solomon, Arndt, & Schimel, 2004; Rosenberg, 1979) there is variation within and between each concept which makes it important to measure and incorporate each in a holistic manner which is referred to herein as sense of self. Furthermore, the sense of self that was defined in this thesis as adaptive and robust is one that is made up of a high self-esteem, a stable self-concept clarity, high positive affect, low negative affect, and a strong sense of coherence.

The first self-related concept we have included is self-esteem. A large body of research exists concerning self-esteem and its relevance to psychological wellbeing (Gallagher, 2013; Leary & Tangney, 2012; Pyszczynski et al., 2004; Rosenberg, 1979; Stopa, 2009). High self-esteem is "negatively correlated with indicators of anxiety and anxiety-related problems and positively correlated with successful coping with stress and with indicators of good mental and physical health" (Pyszczynski, Greenberg, Solomon, Arndt, & Schimel, 2004, p. 438). Pyszcznski et al. (2004) go on to define self-esteem as a buffer against anxiety, which "the vast majority of psychological theories assume…is a pervasive force…that is generally adaptive and associated with a broad range of desirable outcomes" (p.435).

It is broadly accepted by researchers that self-esteem is an "attitude towards, or an evaluation of, the self" (Stopa, 2009, p. 8). This evaluation can be explicit, implicit, state, or trait in nature. Explicit self-esteem is formed of the conscious thoughts that we hold about ourselves, while implicit self-esteem is formed of our unconscious thoughts and attitudes (Creemers, Scholte, Engels, Prinstein, & Wiers, 2012; De Raedt, Schacht, Franck, & De Houwer, 2006; Stopa, 2009). Stopa notes that the two constructs are only "weakly correlated" and remain "distinct" from each

other (2009, p. 8). Consequently, it has been found that positive implicit self-esteem, found in healthy individuals, can exist in depressed individuals even when their explicit self-esteem is directly affected (De Raedt et al., 2006; Stopa, 2009).

Furthermore, research has shown that using a Pavlovian conditioning technique can alter individuals' perceptions of people, objects, ideas, etc. by associating them with implicit self-related attitudes, implying that implicit attitudes are strong, pervasive and resistant to change (Prestwich, Perugini, Hurling, & Richetin, 2010). Prestwich, Perugini, Hurling, and Richetin (2010) go on to note "As people, on the whole, have positive implicit evaluations of themselves (Greenwald & Farnham, 2000), self-related stimuli have been used successfully to create positively valenced CS [conditioned stimuli] (Gawronski, Bodenhausen, & Becker, 2007; Perkins, Forehand, & Greenwald, 2006; Walther & Traselli, 2003; Walther, Nagengast, & Traselli, 2005)" (p. 62). Thus, it is important here to note, particularly in a clinical perspective, that one's sense of self can be buoyed by an appeal to an underlying positive implicit self-esteem even when the explicit self-esteem appears weakened due to depression or trauma. We will return to this idea when investigating the role of positive imagery manipulations.

However, the sense of self was more than just a reflection of self-esteem, and self-concept clarity and affect are also important components. Campbell et al. (1996) explain that individuals with high self-concept clarity are more likely to have formalized and concrete views about themselves and the world they live in, while those with low scores are consistently unstable, divided, and unsure about themselves and their place in the world. Likewise, positive and negative affect have been studied copiously and in relation to many different aspects of wellbeing. Studies have shown that high negative affect is associated with self-reported stress, poor coping styles, and health complaints, while positive affect is associated with social activity and high levels of satisfaction with pleasant events (Clark & Watson, 1988; Watson et al., 1988). Finally, the sense of self includes the sense of coherence that is discussed in detail in Chapter 2.

Autobiographical Memory and the Self

Above, the self was described by John Locke in Gallagher (2013) as entirely entwined with memory and the ability to think and remember oneself from one time point to another in a continuous way. This description would appear to be one of the earliest of autobiographical memory. Conway and Pleydell-Pearce (2000) support this as they state, "there appears to be a consensus that autobiographical memory and the self are very closely related, even, according to some theorists, *intrinsically related* so that autobiographical memory is a part of the self" (p. 264). Due to this, autobiographical memory has now become a central area of study within self and memory research in a number of different psychological fields (Conway & Pleydell-Pearce, 2000). This section will look into the issues around the formation of the autobiographical knowledge base and trauma-related disruptions of the system. Similarly, the issue of the working memory system

will be investigated and its role in creating positive or negative self-images. To investigate these processes, this section will focus primarily on the work done by Conway and Pleydell-Pearce (2000) and Hulme, Hirsch and Stopa (2012). In addition, similar work by Ehlers and Clark (2000) will be reviewed briefly in the following chapter on posttraumatic stress.

Autobiographical Memory

Conway and Pleydell-Pearce (2000) propose that autobiographical memory is composed of three levels: lifetime periods, general events, and event-specific knowledge (ESK). These levels go from broad to specific, working from general time periods in your life to specific memories associated within that time period. The event-specific knowledge is described as the most vivid and specific aspects of a memory. The role of ESK level memories are particularly important when looking at the effect of trauma.

Vivid, intrusive memories referred to as "flashbulb" memories which are highly specific characterize trauma-related stress. These often sensory related flashbulb memories are unorganized and are only loosely integrated into the autobiographical memory. Thus, trying to incorporate these memories back into the autobiographical knowledge base as a whole is often a main concern in trauma therapy. Recently, however, research has also been conducted to look at whether the inability to retrieve highly specific, ESK level, memories could be a risk factor for posttraumatic stress (Bryant et al., 2007; Dalgleish et al., 2008). Bryant, Sutherland and Guthrie (2007) were able to show that firefighters who tested low on the ability to retrieve ESK level memories from cues before experiencing traumas were more likely to experience PTSD after trauma exposure. Thus, not only are non-integrated flashbulb memories a sign of PTSD, but deficiencies in the general ability to encode ESK level memories may be a risk factor for future trauma-related stress. Thus, understanding more about ESK level memories and the way they are encoded into the autobiographical knowledge base will remain an important area for research into trauma-related stress.

The Working Memory System

The working memory system and the working self are concepts that work in cooperation with the autobiographical memory. The working memory system is conceptualized as containing goal-oriented selves that include an "actual self" (one which most accurately reflects the self), the "ideal self" (one which the self desires to be), and the "ought self" (one which is defined by what others project onto the self) (Conway & Pleydell-Pearce, 2000). Memories are then encoded into the memory system based on negative or positive emotions surrounding the discrepancies between the different types of self. Conway and Pleydell-Pearce (2000) go on to say that the more discrepancies the more negative the emotions surrounding the encoded memory. However, the more discrepancies the more likely that the self would be motivated to obtain goals that would bridge the gap in the current working self. Furthermore, Conway and Pleydell-Pearce (2000) reflect

that memories are the most vivid and remembering is more accessible for those memories in which there is either very little discrepancy or a vast amount of discrepancy surrounding the memory.

Following along from this, Conway and Pleydell-Pearce (2000) discuss the self-memory system (SMS). The SMS is a dynamic system where the autobiographical memory and the working self are integrated. The idea is that the autobiographical memory provides a groundwork for the goals which the working self can then generate. Thus, the working self should not create goals that are unrealistic or contradictory that what the self "knows" through its autobiographical knowledge base (Conway & Pleydell-Pearce, 2000). They go on to say that when the self-memory system breaks down and contradictions between autobiographical knowledge and the working self do emerge, the self enters into a pathological state and this can underlie a number of psychological disorders.

Hulme, Hirsch, and Stopa (2012) go on to discuss the SMS as originally proposed by Conway and Pleydell-Pearce (2000) in a concise manner, stating:

> "The SMS stores conceptual knowledge (e.g. beliefs about the self such as "I am kind/boring/ confident") and autobiographical information (memories of lifetime periods, e.g. "being at school," and specific event memories, e.g. "my 21st birthday party"). According to the model, individuals have a stable long-term self, which results from an interaction between conceptual and autobiographical knowledge, and a working self, which is constructed in response to situational demands. The working self contains a subset of the total information held about the self and is constrained by information contained in the long-term self." (Hulme et al., 2012, pp. 163–164)

For Hulme, Hirsch, and Stopa (2012), the pathological side of the SMS develops in socially anxious individuals who continue to retrieve negatively encoded memories of themselves in autobiographical situations that may or may not be represented accurately in the memory. This continued retrieval of the negatively encoded memories from the past creates a working self that is also more negative and generates "goals and plans" that would account for the negative emotional situation that it anticipates in the hopes of creating less discrepancy, (i.e. expect a negative situation equals experience a negative situation).

However, this same idea lead to the possibility that if a positive working self could be enacted through ESK level retrieval then this could potentially prime an individual to have positive goals and expectations. If a repeated positive working self could be encoded more clearly into the overall autobiographical knowledge base through the use of positive memories, then there would be fewer discrepancies with setting more positive goals and ambitions. With time this could lead the more "stable long-term self" into believing that it is a more positive self. Chapter 8 addresses this

issue more fully and discusses the positive imagery manipulation that was designed to try and temporarily enhance the positivity of the working self through the retrieval of highly specific positive memories. With the repeated use of this design, and the attempt to utilize a new and equally positive memory in each session, more and more positive ESK level memories can be reinforced in the working self and eventually made more accessible in the overall autobiographical knowledge base. Consequently, creating a working memory system that is encoded with more and more, less discrepant positive memories.

Chapter 4: Posttraumatic Stress

In 2013, the Fifth Edition of the Diagnostic and Statistical Manual of Mental Disorders (DSM-5) was released by the American Psychological Association. In the new edition, a section dedicated entirely to stress disorders has been introduced, and removes the disorder from the controversial anxiety disorder classification. The controversy primarily revolved around the fact that anxiety is by its nature a fear of something happening to a person in the future. PTSD involves a persistent fear of something that happened in the past. However, it is a complex disorder as a sense of anxiety and "current threat" of reliving this past event is very real and reflects a fear of future experiencing of the past event. Thus, this current threat, in combination with dysfunctional thinking, forms the base for cognitive models which developed to explain how and why one develops PTSD and why it becomes persistent. For the full DSM-5 (American Psychiatric Association, 2013) criteria for a PTSD diagnosis see Appendix A.

Cognitive research into PTSD has progressed over the recent decades primarily through several well-developed theories. The most frequently referenced theories are the Emotional Processing Theory, (Foa et al., 1999; Foa & Kozak, 1986), the Cognitive Model, (Ehlers & Clark, 2000), the Dual Representation Theory (Brewin, 2001), and a compelling Diathesis-Stress model (Elwood et al., 2009). These theories built upon each other over time and expanded on key factors concerning the causes of PTSD, the maintenance of the disorder, and possible treatment options. These models touch on the behavioural, cognitive, and even neurological aspects of PTSD.

Ehlers and Clark (2000) introduced the idea of "current threat" to explain why a trauma from the person's past continued to cause feelings of current anxiety and induce intrusive flashbacks. Current threat has been attributed to negative appraisals of the trauma and its sequelae as well as an inability to successfully integrate the trauma memory within the person's autobiographical memory (see Chapter 3 for more detail on autobiographical memory). The negative appraisals of the trauma/sequelae are said to affect current threat by creating erroneous beliefs concerning both external and internal situations. External negative appraisals are often based in the idea that the "world is an unsafe place" while internal negative appraisals are geared towards ideas such as "I cannot get past this" or "everyone knows that I am a victim" (Ehlers & Clark, 2000). These negative appraisals can lead to an exaggerated sense of danger, incorrect interpretations of others' actions, and avoidance behaviours that all increase levels of current threat. In addition, misinterpretations of one's own cognitions at the time of the trauma, such as "I deserve the things that happen to me" also cause/contribute to negative appraisals (Ehlers & Clark, 2000, pp. 322).

Ehlers and Clark (2000) suggest that the inability to integrate certain memories into the autobiographical memory also leads to a sense of current threat. Autobiographical memory can be retrieved via "higher-order meaning-based retrieval strategies" (Ehlers & Clark, 2000, pp. 325) or through lower-order triggering stimuli such as sights and smells. These autobiographical memories as described by Ehlers and Clark (2000) are well-ordered, highly organized, and in appropriate temporal order just as the autobiographical memory system proposed by Conway and Pleydell-Pearce (2000). On the other hand, trauma memories are often extremely disorganized with missing memories and segments out of temporal order. Flashbacks are associated with the stimulus-based
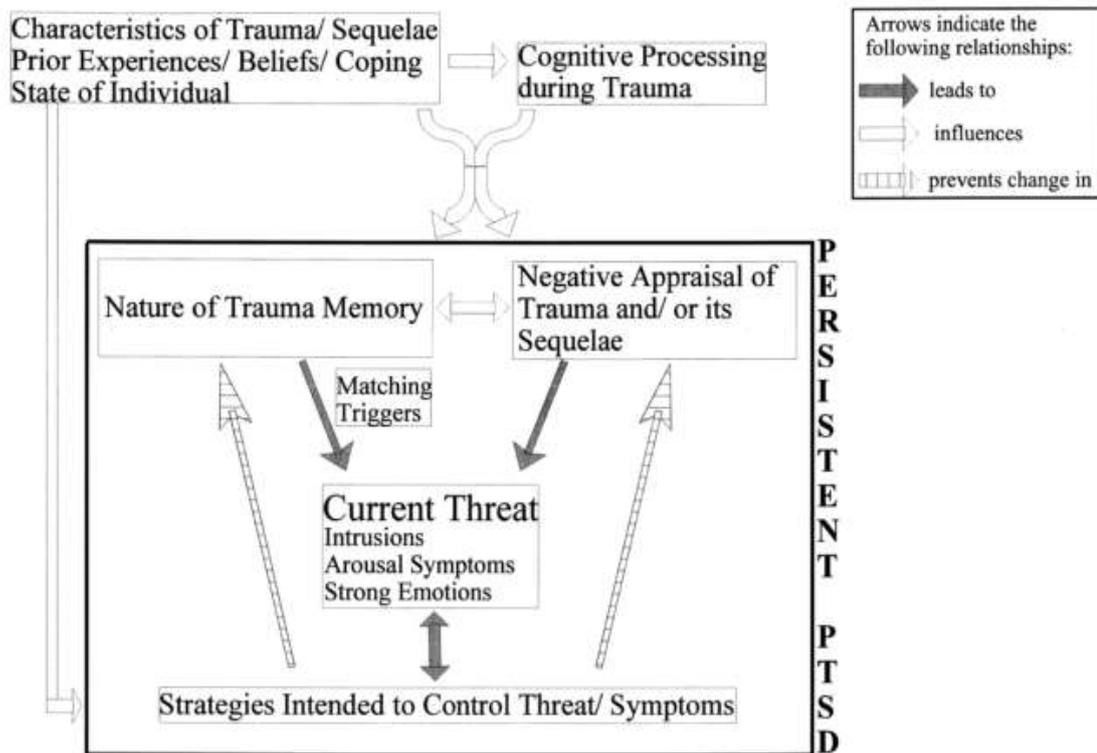
Figure 4-1. Ehlers and Clark's Model of Posttraumatic Stress Disorder

triggering of memories, while standard memories are primarily "organized through themes and personal time periods" (Ehlers & Clark, 2000, 325). In addition, when memories are accurately contextualized into "themes and time periods" of higher-order memory, they are *inhibited* from staying in stimulus-based memory, thus reducing flashbacks (Ehlers & Clark, 2000). Ehlers and Clark go on to discuss how the encoding of the memory is related to the contextualization into autobiographical memory structures. They suggest that persistent PTSD is highly correlated with the memories at the time of the trauma being confused, overly connected to sensory sensations, associated with dissociation, mental defeat, and erroneous beliefs formed as a result of the incident (Ehlers & Clark, 2000).

Ehlers and Clark's (2000) model also addresses the issue of how the personal interpretation of the characteristics of the event itself affect the persistence of symptoms. These personal interpretations may lead to extremely strong, negative appraisals and dysfunctional sequelae.

Firstly, if a person views the trauma as being completely out of their control, they may then generalize these perceptions to mean that they have little or no control over any other parts of their lives. Similarly, if the trauma leads to permanent physical injuries, they may form beliefs that since they are permanently physically injured they will remain permanently psychologically "injured". Thus, they may avoid PTSD therapy since the belief is that nothing will help. Finally, when other people's reactions are evaluated one may feel that they are being judged or even blamed for the trauma.

Similarly, Ehlers and Clark (2000) assign prior beliefs and experiences as significant to the interpretations of traumatic events. Individuals who previously held negative cognitions about the self and the world and are high in pessimism may have these views reinforced during a trauma. Others who have a strong sense of self and are high in optimism may be completely shocked and broken-down by a traumatic event, especially when the individual is targeted (e.g. rape, assault), leading to pervasive negative appraisals. Finally, individuals who believe that feeling distress, admitting to psychological problems, or showing signs of "weakness" are all abhorrent qualities are much more likely to try to induce thought suppression behaviours (which maintains symptoms) and avoid any therapeutic options.

Although Ehlers and Clark have contributed a robust cognitive model to explain the way PTSD develops and becomes persistent, a more recent theory has added some interesting information to the discourse on PTSD. This theory is based in the diathesis-stress model which is prominent in medicine and is being more and more widely used in psychological analysis. The diathesis-stress model as introduced in medicine involves the existence of a pathogen lying dormant in a human body until a sufficient amount of stress activates the pathogen and then a physiological disorder develops. In psychological terms, diatheses "are conceptualized as relatively stable individual differences (e.g., temperament, personality traits or cognitive styles) that increase one's vulnerability to stress and to the development of psychological disorders. Psychological vulnerabilities are described as stable (without intervention), endogenous (i.e., resides within the person, genetic), latent (i.e., not easily observable), and likely to interact with stress (Ingram & Price, 2001)" (Elwood, Hahn, Olatunji, & Williams, 2009, p. 88).

Elwood, Hahn, Olatunji, and Williams (2009) have proposed that the vulnerability in relation to the diathesis-stress model is more causally related to symptom development than typical "risk factors". Thus, when the "stress" of a trauma occurs, individual vulnerabilities within the victim will provide better predictors of the actual development of PTSD. Elwood et al. (2009) identifies three levels of vulnerabilities at the biological/genetic, general, and specific levels. They point out that cognitive vulnerabilities are a particularly well studied and accepted form of diathesis. This is a reflection of the work done on the Posttraumatic Cognitions Inventory (PTCI)

(1999) and by Brewin (2001), reinforcing how pre-, peri-, and post-trauma attitudes and beliefs play a large role in the development and maintenance of the disorder.

Elwood et al. (2009) examine four main vulnerabilities that they identify as being the most significant to the development and maintenance of PTSD: negative attributional style, rumination, anxiety sensitivity, and looming maladaptive style. Negative attributional style (NAS) is defined as "the tendency to consistently attribute negative events to internal, stable, and global causes" (Elwood et al., 2009, pp. 91). An individual high in NAS will assume responsibility for all the negative events that occur in their lifetime, and predict that negative events are a regular part of all areas of life. This type of thinking has been positively correlated with depression, neuroticism and negative affect, while negatively correlated with optimism, extraversion, and positive affect (Elwood et al., 2009). Elwood et al. (2009, p. 92) go on to say that Mikulincer and Solomon (1988) found in a longitudinal study that when a trauma survivor attributed negative events to external, stable, and uncontrollable causes then there was a significant increase in the development of PTSD. High negative attributional style (NAS) is associated with higher negative affect and lower positive affect. NAS reflects significant negative cognitions about the self (internal control) and the world (uncontrollable causes), and it would likely also be reflected in a lower sense of self.

Elwood et al. (2009) go on to explain how rumination, or the repetitive meditation on negative emotions, thoughts and events or other distressing situations, is a maintaining factor for depression and PTSD, as well as a likely vulnerability. Rumination is thought to prevent the higher-level processing required for the trauma memories to become properly integrated within the autobiographical memory, and thus, maintains the disorder. The third major vulnerability is anxiety sensitivity which is the fear of anxiety and anxiety symptoms based on the idea that the symptoms are harmful. When symptoms do arise, individuals become so afraid that it reinforces the anxiety. This is very similar to the mechanisms associated with panic attacks and the fear of future panic attacks being sudden and uncontrollable.

Finally, looming maladaptive style is associated with how an individual interprets present and future threat. Individuals create a mental image of possible threat and then are able to plan ways to avoid such threat. However, this becomes maladaptive in individuals with PTSD when they "perceive ambiguous situations with a bias toward overestimating the magnitude, severity, and progression of risk and danger" (Elwood et al., 2009, pp.95). Thus, similar to the overgeneralization associated with panic attacks, individuals with PTSD believe that they might actually die from the physical symptoms that are associated with flashbacks. Due to this, the individual becomes pathologically avoidant and is unable to learn that most life situations are not dangerous and that symptoms are manageable.

In addition to the four main vulnerabilities that Elwood et al. (2009) present as key to their diathesis-stress model, they also addresses other vulnerabilities for PTSD including: negative affect, neuroticism, affect instability, and a fragile self-esteem. Elwood et al. (2009) refer to the

work by Kashdan, Uswatte, Steger, and Julian (2006) when discussing the role of self-esteem and affect instability in the development and maintenance of PTSD. Here it is relevant to note that Ehlers and Clark (2000) highlight "mental defeat" as the best predictor or "vulnerability" for the development of PTSD. Mental defeat is the process of "giving up" during the trauma and no longer seeing oneself as "human". This allows the person to be completely engulfed in negative beliefs about the self and the world, and leads to chronic PTSD.

Although there are important and overlapping features in all of the theories discussed here, for the purposes of this thesis, the primary model I will reference is Ehlers and Clark's Cognitive Model due to the highly integrated role of negative "self" cognitions. As I have discussed previously, a strong sense of self is crucial to creating a resilient and healthy individual. Thus, under the Cognitive Model of PTSD, it is assumed that one should find a great deal of negative thoughts concerning the self and self-blame. It is important for the research in this thesis to ask the question: in these individuals, did a lower sense of self exist prior to the trauma event making the individual less resilient, or did the trauma event reduce the individual's sense of self over time?

Chapter 5: Posttraumatic Growth

So far this thesis has addressed issues such as resilience, positivity, and salutogenesis. Another similar concept to these is *posttraumatic growth*. This term coined by Tedeschi and Calhoun (1995) is defined as "the experience of positive change that the individual experiences as a result of the struggle with a [severe] traumatic event" (Calhoun & Tedeschi, 2013, p. 6). This positive change is not only meant to represent recovery from a trauma, but a sense of having surpassed one's wellbeing prior to the trauma. For example, in *What Doesn't Kill Us* by Stephen Joseph (2011), he makes the analogy of taking a broken vase and instead of just rebuilding the vase, creating an entirely new mosaic from the pieces. It is this process of reaching an entirely new state of wellbeing, which has been put forth as truly representing growth after trauma (Affleck & Tennen, 1996; Hefferon, Grealy, & Mutrie, 2009; Tedeschi & Calhoun, 1996, 2004; Triplett, Tedeschi, Cann, Calhoun, & Reeve, 2012). Likewise, this growth is often related to the ability to make meaning out of the trauma. As mentioned many times in this thesis, meaning making is often crucial for health and wellbeing, and this is also true for successful growth out of trauma (Janoff-Bulman, 2004; Neimeyer, 2004; Tedeschi & Calhoun, 2004; Triplett et al., 2012).

Tedeschi and Calhoun are now credited with the most persuasive model of posttraumatic growth (PTG). However, Calhoun and Tedeschi (2013) acknowledge scholars in the 60s and 70s such as Frankl, Caplan, and Yalom for pushing this idea into mainstream research. This was followed by important related research into the effect of trauma on the self and possible "benefit finding" through overcoming adversity and achieving a higher level of function by Janoff-Bulman (1992), Affleck and Tennen (1996), and Linley and Joseph (2002, 2004) as discussed earlier in this thesis. However, as this disparate research was formalizing into a cohesive area of study within Psychology, Tedeschi and Calhoun (1995; 2004; Calhoun & Tedeschi, 2013) were already working on a functional cognitive model to give a name to the processes that underlie what is now largely referred to as posttraumatic growth.

Tedeschi and Calhoun's Model

The first thing that Tedeschi and Calhoun (1995; 2004; Calhoun & Tedeschi, 2013) stress is that trauma is first and foremost almost always a negative event and results in negative consequences for the individual experiencing the trauma. Similarly, the more severe and prolonged the trauma, the more likely that there will be intense distress and negative outcomes both psychological and physical. They point out that negative outcomes are usually expressed as emotions such as anxiety, fear and guilt, intrusive thoughts and images, and behaviours such as substance abuse and social withdrawal. Calhoun and Tedeschi (2013) are adamant that researchers and clinicians, who are assessing PTG amongst their clients who are suffering from trauma related distress, do not devalue their very real negative experiences in the search for forced "growth".

Clinicians must remember that some clients may never find self-reported growth while other clients may rush to find meaning and self-reported change through their adversities.

Nevertheless, when self-reported growth does emerge, Calhoun and Tedeschi (2013) found that it was within one or more of the five following areas: (1) personal strength, (2) relating to others, (3) new possibilities in life, (4) appreciation of life, and (5) spirituality. Furthermore these could be grouped into three categories: (1) changes in oneself, (2) changes in relationships with others, and (3) changes in philosophy of life (Calhoun & Tedeschi, 2013).

Changes in oneself include the awareness that the individual has changed in some way that leads to a perception of the post-trauma self as stronger than the pre-trauma self; the "new" individual has more personal control over his/her life in a positive way, and s/he is more self-reliant (Calhoun & Tedeschi, 2013). Changes in relationships include withdrawal from some seemingly superficial relationships and replacing them with more satisfying relationships. Calhoun and Tedeschi (2013) note that people were more open and honest with people when they did share narratives about their trauma and showed increased compassion in general towards others. Finally, they found that changes in the individual's philosophy of life were particularly significant and included increased appreciation for the small things, setting new priorities, an increase in spirituality, and above all else, finding meaning in the individual's life.

Calhoun and Tedeschi's (2013) functional cognitive model was an attempt to explain the mechanisms at work which would lead to the positive outcomes mentioned above. They noted in their research (Calhoun & Tedeschi, 2004; Tedeschi & Calhoun, 1996) that in general women, and those who report having experienced more severe traumas, report more growth. They also found that certain personality traits such as extroversion and openness influenced levels of reported growth (Calhoun & Tedeschi, 2013). However, the most important factor for growth that Calhoun and Tedeschi (2013; Tedeschi & Calhoun, 2004) have identified is what they call a "seismic" challenge to an individual's assumptive world.

The "assumptive world" is based on a concept developed by Janoff-Bulman in 1992. Calhoun & Tedeschi (2013) define the assumptive world as the schema or belief system that an individual uses to understand the universe, how it works, and one's place in it. Both Calhoun and Tedeschi (2013; Tedeschi & Calhoun, 2004) and Janoff-Bulman (2004) explain that it is a dramatic or "seismic" shattering of one's assumptive world that leads to the formation of trauma symptoms, such as PTSD. It is the rebuilding of this assumptive world that allows for the possibility of growth. In support of the Calhoun and Tedeschi's (2004) model, Janoff-Bulman (2004) states:

> Traumatic life events shatter our fundamental assumptions about ourselves and our world. In the aftermath of these extreme experiences, coping involves the arduous task of reconstructing an assumptive world, a task that requires a delicate balance between confronting and avoiding trauma-related thoughts, feelings, and images. Over time, with the help of personally meaningful cognitive reappraisals and

genuine support from close, caring others, most trauma victims manage to rebuild their inner world. They can move on with their lives, which no longer seem to be wholly defined by their victimization. Victims become survivors. (Janoff-Bulman, 1992, p. 169)

The functional model that Calhoun and Tedeschi postulate can be seen in Figure 5-1 (Calhoun & Tedeschi, 2013). The pre-trauma assumptive beliefs are at the top of the model and are only challenged when a "seismic" level event threatens those beliefs. The model is complex and shows different routes through to "wellbeing and adjustment" based first on the make-up of one's pre-trauma assumptive world, primarily whether there is a true challenge to core beliefs versus whether one's assumptive world can assimilate and accept the traumatic event. This is key to Calhoun and Tedeschi's (2013; Tedeschi & Calhoun, 2004) and to an extent Janoff-Bulman's (1992, 2004) view that for growth to occur a severe threat to one's assumptive world must take place. In fact, Calhoun and Tedeschi (2013; Tedeschi & Calhoun, 2004) maintain that if the assumptive world is flexible enough, even "resilient", than there will be little likelihood of growth. This implies that the more resilient and more robust a person's sense of self, the less likely that person would experience posttraumatic growth from a traumatic experience. Thus, these people may be either more protected from initial distress and may experience less overall distress or they may be more adaptable in their processing of the distress which leads to quicker recovery. However, either way, they may not experience the kind of schema shift necessary for "growth" as envisioned by Calhoun and Tedeschi (2013; Tedeschi & Calhoun, 2004). This protection has been addressed in earlier chapters on the robust self and resilience, but also through the trauma analogue experiment in this thesis which showed that groups with a more robust sense of self experienced less initial and prolonged distress after exposure to a trauma scenario.

The next process in the Calhoun and Tedeschi (2013) model is what determines the progress towards growth. This is the cognitive aspect of the model. Calhoun and Tedeschi (2013; Tedeschi & Calhoun, 2004) refer to this cognitive functioning as "rumination". The term rumination often carries a negative connotation as it is related to the "dwelling over" distressing ideas, memories, etc. that keep individuals from properly moving on (Davis, Nolen-Hoeksema, & Larson, 1998; S Nolen-Hoeksema & Davis, 2004). Just as with Ehlers and Clark's (2000) model of PTSD discussed earlier in this thesis, rumination is often considered to be a major contributor to the maintenance of distress. With this in mind, Calhoun and Tedeschi (2013; Tedeschi & Calhoun, 2004) have dedicated much of their theoretical and empirical work to reinforcing their own concept of rumination, even so much so as to consider changing the use of the word "rumination" to "cognitive processing" or "cognitive engagement" to lessen the stigma of the term without abandoning any of its meaning.
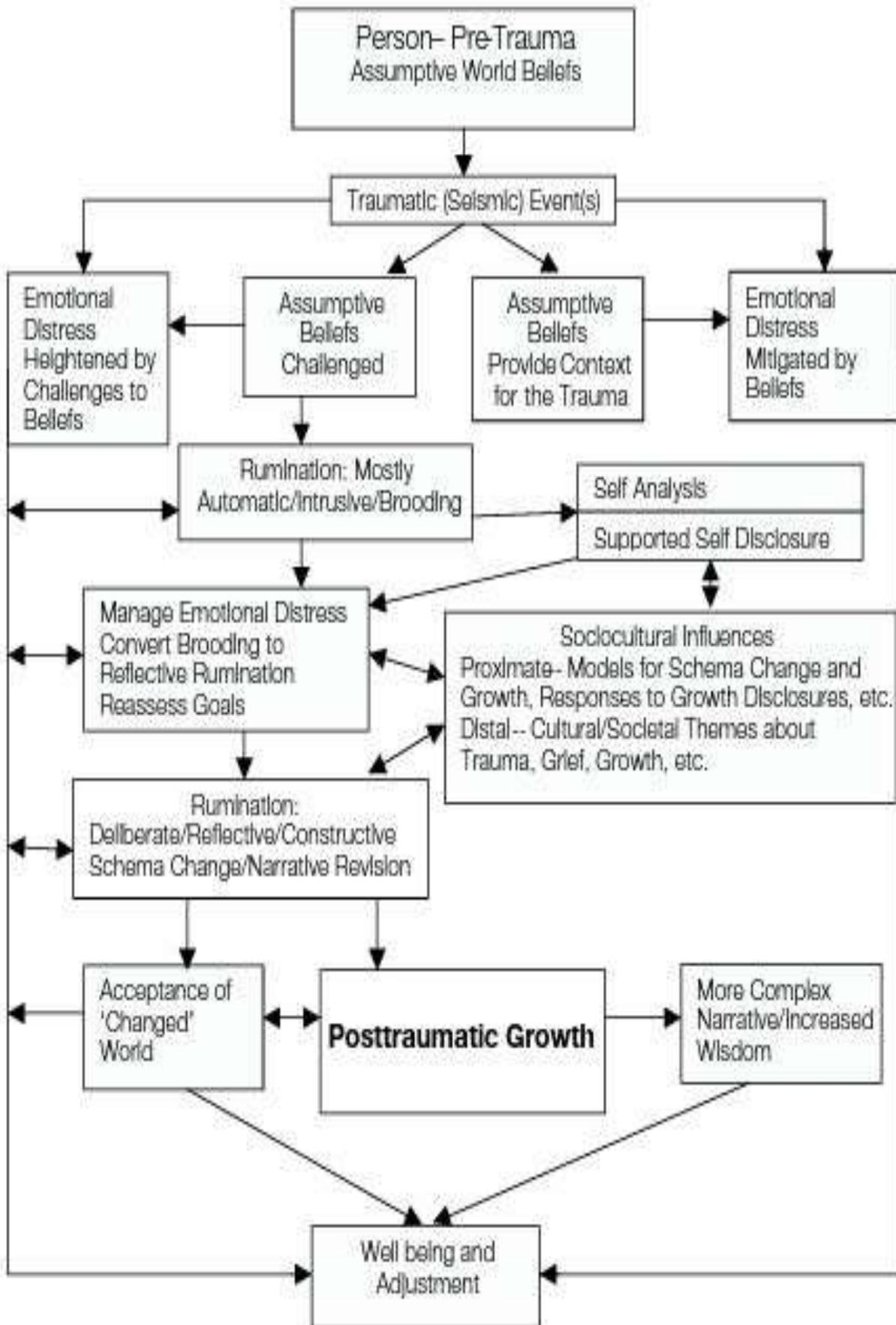
Figure 5-1. Tedeschi and Calhoun's (2013) model for the emotional processing and path to posttraumatic growth.

Calhoun and Tedeschi (2004, 2013) go on to explain that their conceptualization of rumination is a two stage process and it is the initial stage that is synonymous with the negative, intrusive imagery and thoughts associated with the traditional view of rumination. This idea of a two part rumination is not unique to Calhoun and Tedeschi (2013) as the idea of "brooding" vs. "reflection" has also been put forth to show negative and positive versions of the cognitive processing described as rumination (Mor, Hertel, Ngo, Shachar, & Redak, 2014; Susan Nolen-Hoeksema, Stice, Wade, & Bohon, 2007). It would seem that a term such as "cognitive engagement", using their own terminology, would be more applicable in this scenario as an umbrella term allowing (negative) rumination to be part of the larger engagement. Calhoun and Tedeschi go on to describe the second stage as a deliberate, intentional and often methodical re-evaluation of one's assumptive world and the traumatic events themselves in order to find a "constructive" path to a new, well-adjusted and sometimes wiser version of oneself. This is what Calhoun and Tedeschi (2013) consider to be the true path to posttraumatic growth (see Figure 5-1). This stage is more related to the "processing" or "reflection" often referred to when an individual is able to successfully assimilate schema data (Calhoun & Tedeschi, 2013; Davis et al., 1998; Mor et al., 2014; Zetsche et al., 2009). Thus it would seem that a better way to describe this cognitive functioning is "cognitive engagement" made up of negative "rumination" and followed by positive "cognitive processing".

Alongside the internal, cognitive battle represented in this model is the recognition of the importance of the effects of the person's social context. In the current model, Calhoun and Tedeschi (2013) stress the role of the cultural, community, and family level of discourse and feedback that surrounds the person in distress. This was criticised in their earlier model as an important missing factor (McMillen, 2004; Neimeyer, 2004). One particularly relevant issue was the recognition of positive feedback to open and honest disclosures. If the family, community, or even cultural level, especially in societies that discourage public displays of personal victimization, respond with disbelief, indifference, or even hostility towards "sharing" uncomfortable narratives such as child abuse, rape, war crimes, or suicide then there was a much less likelihood of growth (Calhoun & Tedeschi, 2013). This socio-cultural influence emerged as a very important part of the "cognitive engagement" for the individual as unsupportive or critical contexts lead to continuous intrusive "rumination" and an inability to move on to schema re-evaluation, while supportive social contexts ushered individuals more quickly into positive "cognitive processing" and the ability to grow.

Another aspect of the constructive path of re-evaluation that was criticised in Tedeschi and Calhoun's (2004) earlier model was the lack of recognition of the need for narrative making as an essential part of the cognitive process (Harvey, Barnett, & Overstreet, 2004; McMillen, 2004; Neimeyer, 2004). In the 2013 model, Calhoun and Tedeschi show how this narrative making not

only aids constructive "cognitive engagement" but also may lead to "wisdom" (see Figure 5-1) as well as growth. Similarly, narrative making is an important issue when reflecting on other models of distress, such as the Ehlers and Clark (2000) PTSD model and Neimeyer (2004). In fact, Neimeyer (2004) describes three types of narrative disruption caused by traumatic events that can lead to continued distress: (1) disorganized, (2) dissociated, and (3) dominant (see article for full description).

Neimeyer (2004) compares his category of "disorganized narrative" to Ehlers and Clark's (2000) disruption of autobiographical memory which helps maintain distress in trauma victims. It is clearly shown that the ability to create chronological, autobiographical narratives of trauma events can be extremely successful in the treatment of PTSD (Ehlers, 2010). Calhoun and Tedeschi (2013) stress that clear narratives are also essential for reaching the path to growth and wisdom after trauma. Similarly, this narrative making is closely associated with the essential "meaning making" as discussed throughout this thesis as Neimeyer (2004), Janoff-Bulman (2004) and Calhoun and Tedeschi (2013) as well as many others (Antonovsky, 1987; Linley & Joseph, 2011; Triplett et al., 2012) have repeatedly noted that narrative making is most successful in relieving distress when those narratives create an outlet for making meaning out of the trauma.

Another debate over the processing of posttraumatic growth alongside the importance of narrative making and social influences was the important question of how to judge growth (Calhoun & Tedeschi, 2013; Joseph, 2011). Were wellbeing and perceived growth as laid out in Figure 5-1 also synonymous with decreased distress? Initially it was assumed by researchers theoretically that individuals would not report positive growth unless they had also found relief from their distress. However, this was not necessarily what clinicians were finding (Calhoun & Tedeschi, 2004, 2013; Joseph, 2011). This lead Calhoun and Tedeschi (2013) to postulate a two-dimensional system of wellbeing concerning growth and distress.

It was understood that a patient might experience positive, self-reported growth while still possessing distressing feelings over the trauma. Thus, the trauma survivors may not have fully recovered from the painful effects of their experience, but they could begin to see themselves moving forward and even potentially experiencing positive gains from the event. Indeed, Calhoun and Tedeschi (2013) go on to say, "posttraumatic growth is not necessarily an experience that leads people to feel less pain from tragedies they have experienced, nor does it necessarily lead to an increase in positive emotions" (p 21). Posttraumatic growth can contribute to subjective wellbeing without a sense of "cheerfulness" by shifting priorities, appreciating the small things, and helping people to ask more meaningful questions about the world, but although this may be more satisfying, it does not always mean a lessening of pain (Calhoun & Tedeschi, 2013; Joseph, 2011).

Interestingly, this two-dimensional system is paralleled by the two dimensions of subjective wellbeing itself (Carr, 2004; Joseph, 2011; Seligman, 2002). As discussed earlier in this thesis, hedonic and eudemonic wellbeing are distinct forms of happiness that lead to

philosophically different levels of life-satisfaction. Hedonic wellbeing, which is more strongly correlated with the term "happiness", is defined by Joseph (2011) as a "balance between positive and negative emotions" (p 17). However, Joseph (2011, p 17) goes on to say that eudemonic wellbeing is best described by Ryff's (1989) definition of "psychological well-being". Ryff (1989, p. 1071) defined psychological wellbeing as a combination of (1) self-acceptance, (2) positive relations with others, (3) autonomy, (4) environmental mastery, (5) purpose in life, and (6) personal growth. Indeed, based on these ideas, it is possible to see how an increase in a person's eudemonic wellbeing, such as with posttraumatic growth, might not yield an increase in visible hedonic wellbeing or general levels of reduced distress, thus supporting the two-dimensional system of growth.

To summarize, posttraumatic growth as it is most prominently viewed today is based on the Tedeschi and Calhoun (2013) model of emotional processing. This is the processing of trauma so severe that it creates a "seismic" shift in one's view of oneself and one's world. The process of recognizing, managing, and re-evaluating the meaning of the trauma allows for the individual to overcome the trauma in a way that adds more wisdom or personal wellbeing than the person had prior to the trauma. It is this sense of being more than you were before the trauma that sets it apart from just being resistant or recovered from a trauma. Likewise, social support, narrative making, and an increase of eudemonic wellbeing all add to the likelihood of successful posttraumatic growth.

Meaning of Life vs. Meaning in Life

The posttraumatic growth (PTG) literature (Calhoun & Tedeschi, 2004; Joseph, 2011; Linley & Joseph, 2004) distinguishes PTG from its relative, resilience, based on the idea of a curvilinear distribution of "effect on the self" of the trauma; the more severe the effect on the personal schemas the more likely that someone will find PTG in the end. Tedeschi and Calhoun (2004; 2013) discuss this distribution as having "resilient" individuals on one end and those who have a very poor ability to cope with any stressors on the other. Resilient individuals, as we have seen time and time again in this thesis, are resistant to the long-term negative impact of trauma and often have a strong sense of self that can accommodate into their schemas the reality of trauma.

Thus, a resilient person may suffer some distress from the trauma but would be protected against a shattering effect on the self. Although this may mean that the individual suffers less distress, it also means that they are less likely to experience real posttraumatic growth as defined by Tedeschi and Calhoun (2004, 2013); no major schema disruption equals no need for schema restructuring. On the opposite side of the curve, Tedeshci and Calhoun (2004, 2013) theorize that individuals who are low in resilience and have very poor coping strategies will fail to find the resources needed to grow either. These individuals are sadly more likely to have continued stress-related problems (Calhoun & Tedeschi, 2004).

This leaves the majority of most healthy, well-adjusted individuals, who are neither in excess or considerably lacking in resilience. These individuals in the centre would potentially experience a severe trauma, experience distress, and eventually find some form of positive growth on the other side as illustrated in the steps above (see Figure 5-1). With this in mind, Triplett, Tedeschi, Cann, Calhoun, and Reeve (2012) put together an empirical study to experimentally manipulate the relationships between rumination, schema types, meaning making, and life satisfaction.

The main assumptions first addressed were those on rumination and its two stages as set out in the Calhoun and Tedeschi (2013) process of "cognitive engagement": *intrusive rumination* and *deliberate rumination*. Intrusive rumination, which was described above is more related to the negative rumination traditionally associated with trauma maintenance, was defined in this study as consisting of highly automatic and unwanted images and thoughts and was predicted to be highly correlated with higher levels of distress. Deliberate rumination, which was labelled above as the more positive cognitive processing, was defined as the highly intentional and methodical thoughts and re-evaluations which were predicted to be highly correlated with meaning making and growth. (Triplett et al., 2012)

The model that was designed for this experimental manipulation as seen in Figure 5-2 was based on these theoretical connections from the Calhoun and Tedeschi (2013) model. Firstly, the severity of the schema challenge to one's core beliefs was measured with the Core Beliefs Inventory (CBI) (Triplett et al., 2012). Out of this threat, the process of cognitive engagement begins, both intrusive (rumination) and deliberate (cognitive processing), leading to successful

Figure 1. Hypothesized causal model.
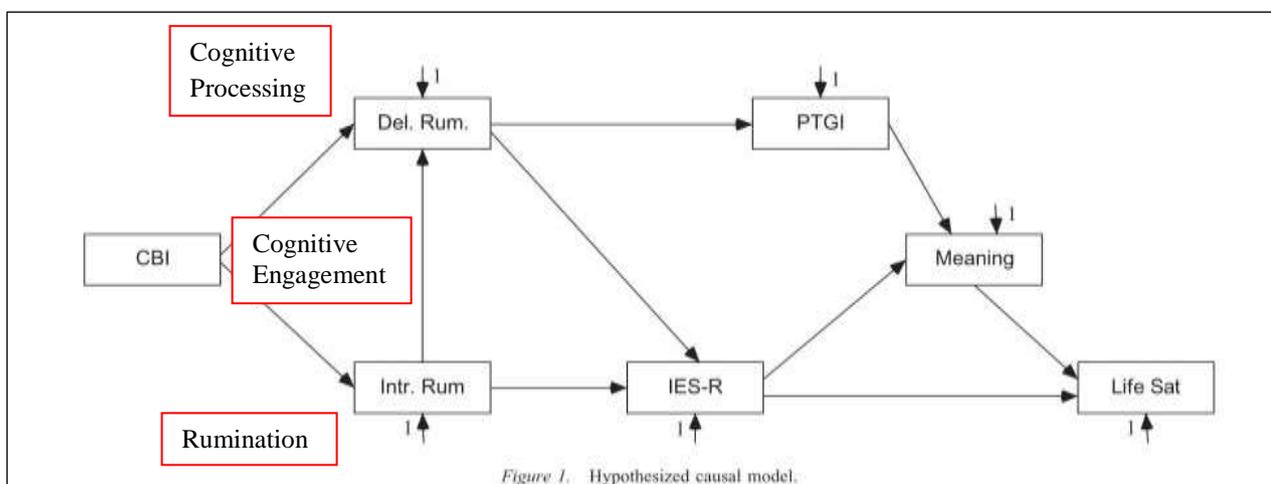
Figure 5-2. Theoretical model of how initial core beliefs would be affected by a traumatic event and potentially lead to posttraumatic growth as measured by life satisfaction. The key to moving through this process is the turning of *intrusive* thoughts into *deliberate* thoughts. (Triplett et al., 2012)

growth or continued distress as laid out by Calhoun and Tedeschi (2013) and in Figure 5-2 above.

In the model as designed above (Figure 5-2), there was also a mechanism for milder levels of distress, which included continued intrusive rumination, eventually leading to deliberate

Figure 5-3. Standardized solutions for the theoretical path predicted to reach posttraumatic growth after a "seismic" trauma to one's core beliefs in Triplett et al. (2012). All paths shown are significant, $p < .01$. R^2 for each endogenous variable shown in italics.
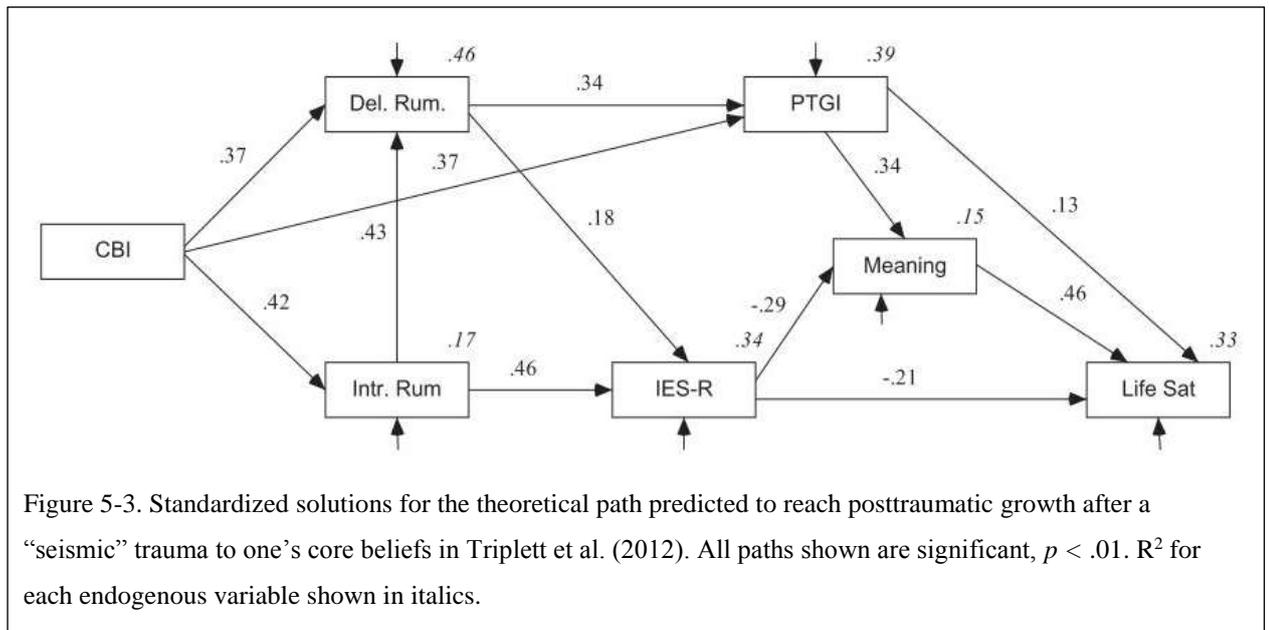
rumination and the possibility of a positive outcome. More severe intrusive rumination was predicted to maintain distress as measured by the Impact of Event Scale-Revised (IES-R) (Triplett et al., 2012). Furthermore, the model shows a predicted path from deliberate ruminations to both distress (in the beginning stages) and to posttraumatic growth (with time and cognitive work), as measured by the Posttraumatic Growth Inventory (PTGI) (Triplett et al., 2012). Finally, there were three main pathways related to the ultimate goal of life-satisfaction. One path showed how a person could mediate their sense of growth (as measured on the PTGI) through the process of meaning making as measured on the Meaning in Life Questionnaire (MLQ-P; Triplett et al., 2012) to reach higher levels of life-satisfaction. Another path showed that certain levels of distress were so great that a person might not reach significant life-satisfaction at all. Finally, the third pathway would allow someone showing distress (as measured by the IES-R) to mediate this distress through the process of meaning making (see Figure 5-2). (Triplett et al., 2012)

The results of the experiment are shown in Figure 5-3, and supported the majority of the predicted pathways. This included positive correlations between amount of trauma (measured by the CBI) and both deliberate and intrusive rumination. As predicted, deliberate rumination (cognitive processing) showed a strong correlation with PTGI and a much weaker positive correlation with distress (as measured with the IES-R). In turn, intrusive (negative) rumination showed strong correlations with distress and negative correlations with life-satisfaction even when mediated by meaning making. In addition, when conducting the best fit analysis, two more direct pathways showed that certain levels of trauma as measured on the initial Core Beliefs Inventory (CBI) could lead directly to growth as measured on the PTGI. This was followed by a direct pathway from reported growth (PTGI) to reported life-satisfaction. As a result of this study, support was provided for Calhoun and Tedeschi's (2013) main theoretical model for posttraumatic growth. They had predicted that the two stages of cognitive engagement would lead to either posttraumatic

growth or ongoing distress depending on whether deliberate (cognitive processing) was taking place or when intrusive (negative) rumination was pervasive.

Although the primary interest for the this study was determining the role of cognitive engagement on PTG and life-satisfaction, Triplett et al.'s (2012) experiment investigated one additional hypothesis. This investigation was on the role of different schema types themselves. Calhoun and Tedeschi's (2013) model clearly predicted that the severity of the challenge to one's schema was crucial to how much growth one could potentially achieve. Thus, it was of interest to know how different initial schemas would react to trauma. This idea was supported by research from Janoff-Bulman (1992, 2004) and through the design of Triplett et al.'s (2012) experiment above.

However, although the severity of the impact of trauma on the individual could be measured by the Core Beliefs Inventory, there was another question that Triplett et al. (2012) were interested in pursuing; what kinds of "resolution" were people finding through their traumas. Resolution was defined by how much meaning the individual had been able to make from the trauma. Earlier research (Calhoun & Tedeschi, 2004; Tedeschi & Calhoun, 2004) and Triplett et al.'s (2012) study predicted that there may be a direct relationship between the amount of resolution they claimed to have found and the amount of perceived growth. Thus, they devised a way to measure how much "resolution" the individual achieved and how that related to the process of growth.

Triplett et al. (2012) hypothesized four different stages of resolutions for use in their experiment. The first stage is represented by those who are on the two extreme ends of our curvilinear distribution: the extremely "resilient" or those with virtually no viable coping strategies. It was predicted that these individuals would not engage with a process of meaning making at all as their schemas would either accept or reject the meaning of the trauma outright. The second stage of resolution would belong to people who had started to make sense of and/or resolve their trauma but who gave up after a time. The third stage would be those who are still actively engaged in meaning making, but have not yet succeeded in doing so. Finally, there would be those who had achieved some form of resolution and had made sense of their trauma. (Triplett et al., 2012)

Triplett et al. (2012) reports the relationship between the different stages of resolution and the different measures used such as for distress (IES-R), challenge to beliefs (CBI), growth (PTGI), and meaning in life (MLQ-P). Relationships generally supported hypothetical models. For example, those in Group 1 (no need to make sense) reported being low in CBI, IES-R, and PTGI which meant that they apparently had no major challenge to their core beliefs (schema) and thereby neither felt much distress nor experienced any real growth. Those in Group 4 (resolved trauma) also reacted as predicted with the reporting of greater challenges to their beliefs, a moderate level of distress, but both higher levels of meaning and life-satisfaction as a result of their ability to make sense of the trauma. See Triplett et al. (2012) for a full discussion of these relationships.

Although it is not possible to draw direct causal relationships between the types of resolution and the mechanisms at work here, there are significant and interesting correlations supporting the debates on the role of resilient assumptive world views, severe challenges to core beliefs and the importance of making meaning of one's trauma (Janoff-Bulman, 2004; Linley & Joseph, 2011; Tedeschi & Calhoun, 2004; Triplett et al., 2012). Similarly, these discussions have touched on a very important issue of the difference between the question of "what is the meaning *of* life?" and the question of "how can I make meaning *in* my life?". Positive psychologists such as Linley and Joseph (2011) point out that the rumination involved in questioning the meaning *of* life (i.e. "Why me?") has been found to lead to continued distress, victimization, and little if any reported growth. However, Joseph and Linley (2011) and many other researchers (Antonovsky, 1987; Carr, 2004; Neimeyer, 2004; Seligman, Rashid, & Parks, 2006; Tedeschi & Calhoun, 2004; Triplett et al., 2012) have continued to argue that the ability to find meaning *in* life (i.e. enjoying the small things) is the most important aspect of facing stress, traumas, etc. and coming out on the healthy and happy side of life.

Alternative Theories

Some of the broad criticisms of all the work involving posttraumatic growth was that it could not be measured objectively. A couple of measures, including Calhoun and Tedeschi's (1996) own measure, the PTGI, was one of the more valid and reliable, but was still showing inconsistent results between cross-sectional and longitudinal studies. In fact, the mixed results of these two types of studies were another concern about the legitimacy of PTG as a viable clinical concept all together. Cross-sectional studies were showing negative correlations between adjustment and wellbeing, while longitudinal studies were showing positive correlations (Zoellner & Maercker, 2006).

In *COMMENTARIES on Posttraumatic Growth: Conceptual Foundations and Empirical Evidence* (2004), numerous researchers in the area of posttraumatic growth were asked to provide commentary and criticism on Calhoun and Tedeschi's (2004) functional cognitive model while offering new ideas for how to make PTG research more consistent, valid, and reliable. Some of these criticism were addressed above in the 2013 version of Calhoun and Tedeschi's model. These included the increased role of narrative making, improved empirical support, reworking of vague functional terms, re-defining optimal functioning as an end result, and acknowledging the importance of socio-cultural factors.

From this review, Maercker and Zoellner (2004) put forth the most critical evaluation and, simultaneously, a replacement model of their own design for comparison. In fact, in 2006 Zoellner and Maercker went on to advance their own theory and review other major theories concerning PTG. To start, Zoellner and Maercker (2006) questioned the validity of PTG as a concept if it did not add anything to the clinical and applicable side of psychology. If PTG could not be shown to

reliably relate to outcomes of decreased distress and increased wellbeing then what was the point of continued research on the concept. However, as many treatment concepts evolve from good theoretical research, it is hard to fully support the dismissive tone here against Calhoun and Tedeschi's work. Providing a strong theoretical foundation on how mechanisms for growth and distress are related can lead to therapies which focus on each individually or in combination.

However, Zoellner and Maercker (2006) continued their critique of PTG research in general when they found researchers were using different definitions of trauma and trauma severity in their studies. The most consistent results for growth were found primarily when the strictest definition of a severe trauma such as death of a loved one, rape, natural disaster, etc. was used for "severe" (Zoellner & Maercker, 2006). Although this was not reliable in all studies either, as Triplett et al. (2012) found that in an "analyses of variance (ANOVA) [that was] calculated to assess differences between outcome measures by trauma type (death of a family member, serious medical problem, etc.) for the combined sample (N = 333) … no significant differences existed between type of trauma and any of the outcome measures" (p. 404).

Finally, Zoellner and Maercker (2006) were concerned that there was an important semantic difference between the definitions for PTG which was likely contributing to the difficulties in reliability. Some theories (Davis et al., 1998; C. Park, 1998; Taylor, 1983) viewed PTG as a coping mechanism in the process of adjustment, while others such as Calhoun and Tedeschi (2004, 2013) viewed it as an outcome, in and of itself. This theoretical difference had led to various and distinct differences in the way the models were tested empirically, thus, creating even more diversity in the literature (Zoellner & Maercker, 2006).

Contributing to the discourse, Maercker and Zoellner, (2004; Zoellner & Maercker, 2006) put forth their own model based on both concepts from Calhoun and Tedeschi (2004) but also on the earlier work by Taylor (1983) and her concept of "positive illusions". Taylor (1983) found that people when faced with a "threatening event" would react with adaptive cognitions that could eventually lead them back to pre-trauma levels of functioning or even at times lead them to growth. This process of adaptive cognitions was "a search for meaning, an effort to gain mastery, and an attempt to enhance the self (Taylor, 1983, p. 1170)" that often was supported through illusory thinking. Although these illusions could potentially cause distress if confronted or disconfirmed, on the whole, the process was viewed by Taylor (1983) as a positive, adaptive cognitive feature that could help the person through the threatening period. Similarly, research has been done to show that positive thinking, such as optimism and positive interpretation bias, have also shown resilient and protective features for wellbeing against trauma (Blackwell et al., 2013; Charles S. Carver, Scheier, & Segerstrom, 2010; Holmes, Mathews, Dalgleish, & Mackintosh, 2006; Kleim, Thörn, & Ehlert, 2014).

With this in mind, Zoellner and Maercker (2006) were particularly critical of Calhoun and Tedeschi's (2004) idea that PTG and distress are two separate concepts and should be measured as

distinctly unrelated. Thus, a patient could report growth but still be experiencing profound distress. For, Zoellner and Maercker (2006) this seemed an unlikely, and clinically unsatisfactorily, way to define the two concepts. They preferred rather to look at growth and distress as two "sides" of the same path to adjustment: one illusory side similar to Taylor (1983) and the other a constructive side such as the deliberate rumination of Calhoun and Tedeschi (2004). Zoellner and Maercker (2006) called their model the "Janus-Face" or two-component model.

These two components were not distinctly separate and unrelated components as Calhoun and Tedeschi (2004) had conceptualized, but, rather, two simultaneous cognitive processes which could lead to maintained distress, a return to pre-trauma levels, or posttraumatic growth. One side of the model was defined by the deliberate and positive ruminations similar to Calhoun and Tedeschi's (2004) model. This type of cognitive processing was seen as constructive and self-transforming and would lead directly to long term adjustment. However, Zoellner and Maercker (2006) postulated that there were also short-term, "positive" illusory cognitions involved. This side could be deceptive and lead to continued distress if it was associated with denial, avoidance, or wishful thinking. However, as suggested by Taylor (1983), they acknowledged that these "illusions" could provide a short-term adaptive mechanism which protects the individual with false strength which could evolve into real strength and growth with time.

Zoellner and Maercker (2006) predicted that further longitudinal studies will show that in those who show "real" long-term posttraumatic growth, short-term illusory thinking will have decreased and long-term, constructive thinking will have increased. Furthermore, they predicted that this mix of illusory thinking with constructive thinking accounts for a large part of the mixed results in current cross-sectional studies as people are at various stages of self-perceived growth, both true and imagined. People may show an insecure self-enhancement early on that fades to distress if they are not able to master their illusory cognitions or they may show early distress while claiming positive thinking which eventually solidifies into "real" growth as protective thinking is replaced with actual positive cognitive re-appraisals. (Zoellner & Maercker, 2006)

Interestingly, in 2011, Zoellner, Rabe, Karl, and Maercker completed an experiment testing whether PTG could be used as a reliable outcome measure of decreased PTSD. This was an extension of their idea that true growth would be accompanied by reduced distress or symptomology of the PTSD itself. This was in contrast to Calhoun and Tedeschi (2004, 2013) who claimed that growth can occur even when there is perceived distress. In addition, Zoellner et al.'s (2011) experiment claimed that the Janus-face model could be tested through the concepts of optimism and openness. They tested this on the basis that optimism was related to illusionary thinking and openness would be true constructive thinking. However, their experiment did not conclusively show that PTG was related to reduced symptomology and they questioned the validity of using PTG as an outcome measure in the end as Calhoun and Tedeschi (2013) had suggested in

their model. They did, however, maintain that their Janus-face model was still a more valid model than Calhoun and Tedeschi's (2013) based on the idea that the growth that was seen was more significantly correlated with openness as they predicted.

In the end, Zoellner and Maercker (2006, 2011) seem to be fighting a semantic battle when you take into consideration that Calhoun and Tedeschi's (2013, Triplett et al., 2012) most recent model is still highly concerned with the cognitive engagement process involved and freely acknowledges that intrusive cognitions have to be overcome to reach the kind of deliberate ruminations needed for posttraumatic growth to occur. It is hard to see a more than superficial difference in this and Zoellner and Maercker's (2006) insistence that illusory thinking needs to be overcome to reach true constructive thinking. It is only Zoellner and Maercker's (2006) claim that distress and growth cannot be separated conceptually and that reduced distress is necessary for actual clinically viable growth to be recognised that differentiates them from Calhoun and Tedeschi (2013). Thus, although Zoellner and Maercker would disagree, it appears that instead of a functional difference in structure, it is the clinical application of the concept that truly divides the current theories.

As far as the research in this thesis is concerned, the relationship between whether a resilient person is more protected yet less likely to experience growth is extremely pertinent. In that case, PTG would not necessarily need to be an outcome as both Triplett et al. (2012) and Zoellner et al. (2011) have stated. However, in those that are less resilient, if the role of positive "cognitive processing" (deliberate rumination/constructive thinking) can be enhanced through an increase in sense of self, then as the theories of salutogenesis and positive psychology maintain, there should be an opportunity to move a person along the ease/disease continuum towards a healthier end and a chance for significant growth.

Chapter 6: Sense of Self as a Resilience Factor to a Trauma Analogue

A robust sense of self has been defined throughout this thesis as the combined strength of high, stable self-esteem, a stable self-concept, low negative affect, and having a meaningful, purpose-driven view of life. It is hypothesized that with this robust sense of self, a person's overall resilience is greater and the person is likely to be more resistant to the stressors of trauma. Research into salutogenesis, resilience, and trauma recovery have repeatedly shown that individuals who are more resistant to trauma are less likely to become negatively affected both psychologically (i.e. suffering frequent and intense intrusive memories after the trauma) and physiologically (i.e. altered heart rate, sleep patterns) (Antonovsky, 1987; Campbell et al., 1996; Ehlers, 2010; Ehlers & Clark, 2000; Weidmann et al., 2009; Zetsche et al., 2009). This same research shows that individuals who are more resistant to trauma at exposure are also more likely to recover quickly even when they show initial distress.

However, not everyone responds the same way to traumatic events, and it is only a minority of people who develop very few to no symptoms after a trauma. Recent research by Calhoun and Tedeschi (2013) and Triplett, Tedeschi, Cann, Calhoun, and Reeve (2012) have found that individuals who have very high levels of resilience exhibit a highly adaptable sense of self that can accommodate traumatic information and then process the trauma in a way which leaves them with less long-term distress. On the other end of the spectrum, individuals which are very low on resilience and have virtually no viable coping strategies for trauma are often unable to process the trauma which often leads to long-term distress.

This theory by Calhoun and Tedeschi (2013) and Triplett et al. (2012) concerning the vulnerability of people with low resilience is similar to the earlier work on posttraumatic stress by Ehlers and Clark (2000) where they acknowledge that those with very negative views on themselves, the world, and the trauma are likely to be more affected by traumatic events. Ehlers and Clark (2000) go on to discuss how those who can process traumatic images and memories effectively into their own autobiographical memory are more likely to recover quickly. This mirrors Triplett et al.'s (2012) argument that adaptable and resilient individuals seem to suffer less distress initially and recover more quickly. See chapter four for more on Ehlers and Clark's (2000) theory and chapter nine for more on Calhoun and Tedeschi's (2013).

The current chapter describes an experiment that was designed to test the idea that individuals at opposite ends of the resilience spectrum will experience different amounts of distress when exposed to traumatic material and will also recover at different rates. The experiment described below used the trauma film methodology, which offers a way to expose individuals briefly to traumatic material in such a way as to provide an analogue of real traumatic exposure but within an ethical framework because the experience of trauma symptoms such as intrusions and distress is transient (Weidmann et al., 2009; Zetsche et al., 2009). Experimental designs have the

advantage of allowing us to test causal hypotheses and this experiment aimed to test whether individuals at the high end of the resilience spectrum would experience fewer intrusions and report less distress on exposure to the trauma film compared to those naturally low in resilience.

An alternative hypothesis is that both groups would respond initially in similar ways but the naturally more robust group would recover more quickly over the 2-3 days following exposure to the trauma film. This is based on the research that shows many trauma survivors share distressing and intrusive symptoms directly after a trauma, but some individuals recover much more quickly than others (Ehlers, 2010). Participants who scored one standard deviation above or below the normative means on the following sense of self measures formed the naturally occurring robust or vulnerable groups: Rosenberg Self-esteem Scale, Self-concept Clarity Scale, and Resilience Appraisal Scale.

The trauma analogue film selected for this experiment was chosen from a study that tested the usefulness of such analogues. Weidemann, Conradi, Groger, Fehm, and Fydrich (2009) compared a number of trauma analogues and found that a single story clip of approximately 15 minutes (13:47) from a fictional movie ("Irreversible", 2003) depicting a rape situation was the most effective at inducing distressing intrusive thoughts and images. Frequency and intensity of intrusive images, thoughts, and memories directly after a trauma have been linked to the development of long-term distress. Thus, the success in creating these temporary intrusive thoughts and images made this film clip the most salient for an analogue study. (Holmes, Brewin, & Hennessy, 2004; Weidmann et al., 2009; Zetsche et al., 2009).

Weidemann et al.'s (2009) study was conducted with university students for credit and non-students for payment with both groups aged between 18-35 years. The methods and clips used in the study were designed within the principles of the Declaration of Helsinki as set forth by the World Medical Association and no participant reported prolonged distress from the viewing (Weidmann et al., 2009). Utilizing a vetted clip such as the one used by Weidmann et al. (2009), creates a level of standardization and generalizability which can often be lacking in these types of analogue experiments. The film has been purchased for use and the details of the clip have been supplied by A. Weidmann (personal communication, February 2, 2014) for replication in this study.

As outlined above, the specific hypotheses were that individuals with a naturally occurring robust sense of self (high self-esteem and self-concept clarity and low negative affect) combined with a high level of resilience would (1) be more resistant to immediate distress when exposed to the trauma analogue, (2) have a more stable state sense of self, and (3) exhibit less prolonged distress over the following days. The group with a vulnerable sense of self (low on self-esteem, self-concept clarity and high on negative affect) with lower levels of resilience would be expected to (1) exhibit more immediate distress when exposed to the trauma analogue, (2) have a less stable state sense of self, and (3) have more prolonged distress. To test the stability of the state sense of

self three repeated measures were used to examine contingent self-esteem, state self-concept clarity, and mood before and after the trauma analogue was introduced.

Method

Design

The study used a mixed design with one between-subjects factor (level of resilience) and one within-subjects factor (time pre- and post-trauma film). The experiment tested how participants with different levels of sense of self and resiliency responded to an established trauma analogue film that was designed to investigate processes that potentially maintain PTSD (Weidmann et al., 2009).

Participants

Participants were recruited from a local university and were given either credits for participation (if they were part of the psychology department's research credit scheme) or paid £5 for participation. The trauma film analogue presents distressing material to participants and therefore can only be administered following strict ethical guidelines. Weidmann et al. (2009) recommend very strict exclusion criteria for participation in the study because of the nature of the material. Their recommended exclusion criteria were followed in both this experiment and in the experiment reported in the following chapter. Accordingly, potential participants were excluded who: (1) were suffering from depression as determined by the Center for Epidemiologic Studies Depression Scale: Revised (CESD-R), (2) suffered from or witnessed a similar attack as the one portrayed in the film clip, (3) been close to someone who has suffered a similar trauma, (4) exhibiting PTSD symptoms, currently suicidal, and/or having past or present psychosis as determined by the Anxiety Disorders Interview Schedule, and (5) under 18 years of age (there was no upper age limit as with Weidmann et al., 2009).

The participants were screened via an online survey for trait self-esteem, self-concept clarity, and resilience. The survey was made up of the Rosenberg Self-esteem Scale, the Self-concept Clarity Scale, and the Resilience Appraisal Scale (see below for more detail). Participants were invited to take part in the main experiment if they scored one standard deviation above or below the normative means set by previous research. This produced two groups: one with a more robust sense of self and the other with a more vulnerable sense of self. The robust-self group comprised 25 participants (19 females, six males, M_{age} = 21.29 (SD = 4.22), age range: 18-36 years), while the more vulnerable-self group had 20 participants (20 females, M_{age} = 19.26 (SD = 1.15), age range: 18-21 years). There was a significant difference between the mean ages of the two groups with the robust-self group having a higher mean age than the vulnerable-self group, $t(41) = 2.03$, $p = .049$. See Table 7.1 (below) for further demographics.

Table 6.1 *Participant Characteristics*

	Robust Group		Vulnerable Group	
	n	(%)	*n*	(%)
Ethnicity				
White, British	16	(64)	18	(90)
White, Other	4	(16)	1	(5)
Black	1	(4)	0	(0)
Asian	3	(12)	1	(5)
Mixed	0	(0)	0	(0)
Other	1	(4)	0	(0)
Year at University				
First-year	11	(44)	8	(40)
Second-year	8	(32)	8	(40)
Third-year	3	(12)	4	(20)
Five-plus Undergrad	1	(4)	0	(0)
Masters/Post-grad	1	(4)	0	(0)
Other	1	(4)	0	(0)

Materials and Procedure

Preliminary Online Trait Measures. These online measures were used to establish which group the participants would be assigned to. Each measure was assigned a value of 1 (one SD below the mean), 2 (between 1SD below and one SD above the mean), or 3 (one SD above the mean) that related to how the individual's score on that measure was related to the normative scores in the validation sample for the respective questionnaire. In order to create a "robust" or "vulnerable" profile the N questionnaires were averaged. Those that scored between 1.00 - 1.66 were considered "vulnerable", while those that scored between 2.34 – 3.00 were considered "robust". The remaining people who fell between would be labelled as "average" and not utilized in this study. This method was devised to operationalize the holistic concept of "robustness" as it was believed that if an individual scored "high" on two of the three measures and "average" on only one then this was still a fairly robust individual. This scoring method would allow for a robust-self individual to score average on one measure but not low on any, while the vulnerable-self individual could score average on one measure but not high.

Rosenberg Self-Esteem Scale. (RSES; Rosenberg, 1979) The RSES is a 4-point scale measuring the trait aspect of self-esteem by asking how a person *generally* feels. The scale is rated from 0 (Strongly Agree) to 3 (Strongly Disagree). Questions include items such as "I feel I have a number of good qualities" and "All in all, I am inclined to feel that I am a failure". There are 5 reversed items, and the scores range from 0-30. Scores between 15 and 25 are within normal range, scores below 15 suggest low self-esteem, and scores above 25 reflect high self-esteem. The Cronbach's α for the robust group was .56. As this was low, item analyses was conducted and showed a strong effect of question 8, *I wish I could have more respect for myself*. Deletion would raise the alpha to .67 for the robust-self group, but it did not significantly change analyses, so it was not deleted. The Cronbach's α for the vulnerable-self group was .80.

Self-Concept Clarity Scale. (SCCS; Campbell et al., 1996) The SCCS is a self-report measure of self-concept clarity which is "defined as the extent to which the contents of an individual's self-concept (e.g., perceived personal attributes) are clearly and confidently defined, internally consistent, and temporally stable" (Campbell et al., 1996, p. 141). 12 items are rated on a scale that ranges from 1 (Strongly Disagree) to 5 (Strongly Agree). There are 10 reverse scored items, and the higher the score, the more self-concept clarity one possesses. Cut-off scales vary from study to study. However, a cut-off score for self-concept clarity can be set at "relatively robust" ($M \geq 45$) and "relatively vulnerable" ($M \leq 35$) through comparisons of low, high, and average means in various research (Campbell et al., 1996; Diehl & Hay, 2011). These cut-off scores were used in combination with the other state measures to determine if the participant had a robust, average, or vulnerable self-concept clarity. The Cronbach's α for the robust-self group was .77. The Cronbach's α for the vulnerable-self group was .63.

Resilience Appraisal Scale. (RAS; Johnson, Gooding, Wood, & Tarrier, 2010) The RAS is a 12 item measure of resilience using a 5 point scale from 1 (strongly disagree) to 5 (strongly agree). The RAS was developed on the basis that three types of positive self-appraisals may be particularly important in buffering individuals from suicidal thoughts in the face of stressful life events (Johnson, Gooding, & Tarrier, 2008). These are appraisals of the individual's ability to cope with emotions, solve problems, and gain social support. Four of the questions developed assessed emotion coping appraisals, four assessed situation coping appraisals, and four assessed social support appraisals. Alpha reliabilities were .88 for the overall scale, .93 for the social support subscale, .92 for the situation coping subscale, and .92 for the emotion coping subscale (Johnson et al., 2010).

The normative mean as determined by Johnson et al. (2010) was 44.93 ($SD = 7.56$). One or more standard deviations above or below the mean represented the cut-off for a robust ($M \geq 52.49$) or vulnerable ($M \leq 37.37$) level of resilience. The subscales were not calculated for this study. The

Cronbach α for the robust-self group was .74. The Cronbach's α for the vulnerable-self group was .78.

Exclusion Criteria Screening Measures. Potential participants who completed the online trait measures were contacted via email to then complete a depression measure, the CESD-R, online to determine eligibility. If they met the eligibility requirements for this study (defined below), then they were asked to come into the lab and complete one last screening measure and the experiment itself.

Center for Epidemiologic Studies Depression Scale: Revised. CESD-R, (Eaton, Muntaner, Smith, Tien, & Ybarra, 2004) The CESD-R is a 20 item measure using a Likert scale to determine the frequency of depressive symptoms over a two week period. Five response options were provided: "not at all or less than 1 day", "1–2 days", "3–4 days", "5–7 days", "nearly every day for 2 weeks". The measure is a validated screening protocol for meeting the DSM-IV criteria for depression. A study validating the use of the CESD-R on 243 university students showed a mean of 16.4 (SD = 13.5) and a Cronbach's α of .93 (Van Dam & Earleywine, 2011) showing good internal consistency.

For this study, several factors were considered for eligibility. A cut-off score of no more than 26 (M = 7.57, CESD-R range: 0 – 26) was set as the base eligibility. This was determined through an analysis of low level responses to the questionnaire for the few participants who scored more than Van Dam and Earleywine's (2011) mean score of 16.4 (N = 7). However, within this score there had to be no signs of suicidal ideation or severe depression as determined by selecting "nearly every day for 2 weeks" on questions 2, 4, 6, 8 and 10 (depression) or more than "1-2 days" on questions 14 and 15 (suicidality).

Anxiety Disorders Interview Schedule for DSM-IV: Lifetime Version. (ADIS-IV-L; Brown, DiNardo, & Barlow, 1994) The Anxiety Disorders Interview Schedule for DSM-IV (ADIS-IV-L) is a structured interview designed to assess for current and past (lifetime) episodes of anxiety disorders, and to permit differential diagnosis among the anxiety disorders according to DSM-IV criteria. The ADIS-IV also contains screening questions for psychotic and conversion symptoms and familial psychiatric history. The ADIS-IV-L is a semi-structured interview schedule that requires the research organizer to personally administer it in order to guarantee that the exclusion criteria are upheld properly.

Experimental Test Booklet. After the participants cleared the final ADIS-IV-L screening measure, they were given a test booklet with questionnaires and instructions on how to complete the experiment. Within the booklet there was a resilience measure (SOC-13), three measures that came both pre- and post-film clip (CSE, State-SCCS, and the I-PANAS-SF), self-report questions concerning the video clip experience, and the trauma diary. This trauma diary provided the first time point for participants to write about the type and amount of distress they experienced directly after the viewing of the film clip. This was analysed against a second trauma diary given to the

participants at the end of the experiment (see full description below). The repeated measures included state measures of self-esteem and self-concept clarity. The third repeated measure was a brief mood measure, the International Positive and Negative Affect Schedule – Short Form. These repeated measures provided key dependent variables for the within subjects factor analyses.

Sense of Coherence Scale (Revised). (SOC-13; Antonovsky, 1987) The SOC-13 utilizes 13 questions on a 7 point scale to reflect a person's view of life and their capacity to respond to stressful situations (see Chapter 2 for a full description). The SOC-13 has a mean tested on US undergraduate students ($M = 58.50$, $SD = 12.10$). It was included at the beginning of the booklet as a complementary measure of resilience to the RAS, but was not a repeat measure. The Cronbach's α for the robust group was .79. The Cronbach's α for the vulnerable group was .51.

Contingent Self-Esteem. (CSE; Kernis & Paradise, 2002) The CSE is a 15 item assessment of the tendency to base feelings of self-worth on specific outcomes or events. Items cluster into three dimensions: living up to expectations, successful performance and acceptance from others. The scale uses a 5-point scale of 1 (not at all like me) to 5 (very much like me). Kernis and Goldman (2006) reported adequate validity and reliability for this measure across a number of studies (as reported by Lakey, Hirsch, Nelson, & Nsamenang, 2014). The higher the score, the greater the insecurity felt by the individual. The Cronbach's alphas for the more robust group were .84 (T1) and .87 (T2). The Cronbach's alphas for the more vulnerable group were .87 (T1) and .89 (T2).

State Self-Concept Clarity Scale. (State-SCCS) The State-SCCS is a 4 item abbreviated version of the full Self-Concept Clarity Scale (SCCS; Campbell et al., 1996; see Chapter 5 for full description) used to measure state self-concept. Four questions were taken from the full SCCS such as: (1) *My beliefs about myself often conflict with one another*, and (2) *My beliefs about myself seem to change very frequently*. The State-SCCS utilizes the same 5 point scale as the SCCS with scores that range from 1 (Strongly Disagree) to 5 (Strongly Agree). Internal consistency was good for this study with Cronbach's alphas of .79 (T1) and .90 (T2) for the more robust group. The more vulnerable group also had good consistency with Cronbach's alphas of .81 (T1) and .78 (T2).

International Positive and Negative Affect Schedule – Short Form. (I-PANAS-SF; Thompson, 2007) The I-PANAS-SF has a total of 10 items, reduced from the 20 in the original PANAS, and uses a 5-point scale of 1 (Very Slightly or Not at All) to 5 (Extremely) in order to measure state mood pre- and post-test. Five of the 10 adjectives represent positive mood states and 5 represent negative mood states. For positive affect, the robust-self group had Cronbach's alphas of .80 (T1) and .75 (T2). For negative affect, the Cronbach's alphas were .40 (T1) and .80 (T2). For the vulnerable-self group, positive affect alphas were .76 (T1) and .17 (T2). Negative affect alphas were .24 (T1) and .67 (T2). These alphas were a mix of low and high over the two time points and

showed high levels of internal inconsistency. However, regardless, the measures were kept in the study.

   Trauma Analogue Video. At this point, as set forth by Weidmann et al. (2009) the participant was prepared to watch the film clip. They were given verbal and written instructions concerning viewing the film clip before it started:

> For the next 15 minutes, we will show you a film. It is important that you keep concentrating on what is happening in each scene. Please try to watch each scene completely. If possible, try not to get distracted from the film, do not turn your head or look away. While watching the film, please imagine yourself being a close witness at the scene. For the purpose of our study, it is important that you let go of whatever reactions you may have and that you do not suppress them. (Weidmann et al., 2009)

The participants were left to watch the film clip alone, while the researcher waited outside the door. The participant was also reminded that they could withdraw at any time and if they wanted to stop they could get up and alert the research staff. After the trauma analogue video was viewed, the participants were instructed that they would be left for two additional minutes alone to reflect quietly on what they had seen.

   If the participant was in any distress and asked to stop the viewing, a brief relaxation and de-stressing procedure was undertaken which consisted of breathing techniques, watching video clips of playful animals, and brief questions concerning overall feeling of ease/dis-ease. When the participant reported that they were no longer suffering from any immediate distress, they were allowed to withdraw from the experiment and was informed that a follow-up would take place to make sure they were not suffer from any prolonged distress. Only one participant withdrew during the experiment. The above procedure was followed. There was a follow-up with the participant to ensure that no distress had recurred. Her data was not used in the study.

   Trauma Diaries. Using Weidmann et al.'s (2009) study as a standard, intrusive images related to the film were measured twice in a Trauma Diary (see Appendix B): once immediately after the two minutes of quiet reflection and then again for three days following the experiment. Before participants completed the Trauma Diary, they received a verbal explanation of what was expected from them and they were given a chance to ask questions concerning the procedure. There were also detailed written instructions in the test booklet on how to complete the diary as seen in Appendix B. Intrusive memories were described as involuntary memories popping into one's mind, e.g., images, sounds, thoughts or feelings that had been present while watching the film or arising during the two minutes of quiet reflection (Weidmann et al., 2009).

   Participants recorded the approximate number of intrusive memories they experienced during the rumination period, and for each intrusion, stated what sensory modality they occurred in (sounds, images, feelings, etc.) and how distressing they were on a scale from 1 (not at all) to 6 (very much).When the entire experiment was completed, the participant was given a second Trauma Diary, identical to the first, to take away with them. They were instructed to fill this in with

their experiences, flashbacks, etc. over the next three days and then return it to the research team via email. An email reminder was sent to each individual after the three days to remind them to return the diary and to ensure that they were not still experiencing major distress. If they were experiencing prolonged distress, advice on where they could seek support would be provided. However, there were no reported circumstances of prolonged distress beyond the three day period from any of the participants.

Reported Measures of Distress, Involvement, and Concentration. Additional self-report items of distress, involvement, and concentration were measured by asking the questions designed by Weidmann et al. (2009): (1) "*How distressing did you find the clip*?", (2) "*How involved have you been in what happened in the film clip*?", and (3) "*How well were you able to concentrate on the film*?". The scale used by Weidmann et al. (2009) was 1 (not at all) to 6 (very much). Weidmann et al. (2009) rated scores of 3 or more as a reasonable level of stress/distress. They also determined familiarity with the film by asking the participants if they had seen the movie before (Weidmann et al., 2009).

These questions were particularly important as they acted as a manipulation check for how participants felt they were affected by the film clip. These responses could be used to help better understand if variations in distress were related to the hypothesized differences in self-variables or to discrepancies in how the film was viewed.

Results

Descriptives for both groups.

Table 6.2 (below) reports the means for each of the measures by group. Some of the means were transformed to restore normality as per the Shapiro-Wilk's test ($p < .50$). However, all the means in Table 6.2 are non-transformed means for ease of comprehension. T2 contingent self-esteem (T2 CSE) was the most affected by the transformations, and in fact, the square root transformation greatly reduced the effect of an outlier in the vulnerable-self group which caused the transformed T2 mean to be higher than the T1 CSE mean. This was more in line with hypothesized effects, but this is not reflected in the non-transformed means in the table.

Table 6.2 *Means and Standard Deviations for the Robust and Vulnerable Sense of Self Groups*

Measure	Robust Group		Vulnerable Group	
	M	*SD*	*M*	*SD*
RSES	26.28	2.44	13.40	3.28
SCCS	48.68	5.32	26.60	4.49
RAS	54.40	3.23	38.85	5.94
SOC-13	72.64	7.50	57.90	6.21
T1 CSE	44.92	9.08	58.25	6.80

T2 CSE	47.12	9.18	56.45[a]	10.42
T1 State-SCCS	17.56	2.42	10.40	3.12
T2 State-SCCS	17.04	3.61	9.55	2.87
T1 PA	14.72	4.54	11.70	3.39
T2 PA	12.64	3.94	11.30	2.43
T1 NA	6.08	1.00	7.05	1.39
T2 NA	14.04	4.50	16.90	4.00

[a]With a reflect and square root transformation this mean becomes higher than the T1 CSE mean creating an increase in CSE after viewing the film clip

What were the differences between the groups for the trait sense of self measures?

As expected from the pre-determined allocation of robust verses vulnerable groupings, the robust-self group scored higher than the vulnerable-self group on all of the following sense of self measures: RSES, $t(43) = 15.10$, $p < .001$, $r = .92$; SCCS, $t(43) = 14.81$, $p < .001$, $r = .91$; RAS, $t(43) = 11.20$, $p < .001$, $r = .86$; SOC-13, $t(43) = 7.06$, $p < .001$, $r = .73$.

How well were the participants able to focus on the film?

The participants were asked four single item questions concerning how well they were able to engage with the film clip. They were first asked if they had seen the clip or the movie before. In this experiment, none of the participants reported seeing the movie/clip. The question regarding involvement invoked the most clarification from the participants, and they were prompted to answer how well they felt they put themselves into the film while watching it. The questions on distress and concentration appeared to be clearer for the participants. The questions were asked on a Likert-scale of 1 (not at all) to 6 (very much). The means and standard deviations for the single item self-report questions are in Table 6.3 (below).

The correlations between involvement and distress provided an indication of whether differing levels of concentration and/or involvement in the film clip lead to any greater or lesser levels of immediate reported distress. In addition, recording the participant's degree of involvement with the clip also allowed us to look at whether these variables were related to varying degrees of distress at later time points.

Table 6.3 *Means and Standard Deviations for the Four Single Item Questions*

	Robust Group		**Vulnerable Group**	
	M	*SD*	*M*	SD
Reported Distress	5.12	1.09	5.35	0.75
Involvement	4.00	1.58	4.80	0.83
Concentration	4.96	0.94	4.85	1.09

To better understand how the different groups were affected by the film clip, each of the variables were compared. A series of t-tests found that there was a significant difference between the robust- and vulnerable-self groups for how involved the participants were in the film, $t(43) = -2.04$, $p = .047$, $r = .30$, with the vulnerable-self group claiming to be more involved. However, there was no significant difference in the reported level of concentration, $t(43) = .37$, $p = .717$, or distress, $t(43) = -.80$, $p = .426$, between the two groups.

Correlations were conducted to look for relationships between having seen the film, the level of concentration, the level of involvement, and reported distress after the clip. It was found initially that in the robust-self group there were no significant correlations. However, as there was a significant difference between the number of males and females in the robust-self group, analyses were run again to see if gender had an effect. When the males were removed from the correlation, there was a significant negative correlation between the amount of concentration and distress reported by females, $r(17) = -.48$, $p = .040$.

In the vulnerable-self group, which had no males, there was a significant positive correlation between concentration and involvement, $r(18) = .49$, $p = .029$, and between involvement and distress, $r(18) = .54$, $p = .013$.

What was the impact of the trauma analogue on the state sense of self?

Contingent Self-Esteem. As mentioned above, the mixed ANOVA was run with the transformed means to see if the film clip affected contingent self-esteem. There was a main effect of time, $F(1, 43) = 7.98$, $p = .007$, $f = .43$, and a main effect of group, $F(1, 43) = 23.18$, $p < .001$, $f = .73$, in which the robust-self group had higher CSE overall. There was also a group by time interaction, $F(1, 43) = 4.39$, $p = .042$, $f = .32$. Follow-up t-tests showed that there was no difference in CSE before and after the trauma film in the robust-self group, $t(24) = -.934$, $p = .360$, whereas there was a significant increase in CSE in the vulnerable group after watching the trauma film, $t(19) = -2.44$, $p = .025$, $r = .49$.

State Self-Concept Clarity Scale. Although there were very negatively skewed results for the robust-self group at both time points, transformations did not seem to be effective at restoring normality. Thus, the repeated measures ANOVA was conducted using the original means. This resulted in a main effect of time which was approaching significance, $F(1, 43) = 3.92$, $p = .054$, $f = .30$, as there was a decrease in self-concept clarity by both groups after watching the film clip. There was also a main effect of group, $F(1, 43) = 70.68$, $p < .001$, $f = 1.32$, with the robust-self group showing a significantly higher overall SCCS. There was no significant time by group interaction, $F(1, 43) = .23$, $p = .636$.

International Positive and Negative Affect Schedule – Short Form. For positive affect no transformations were needed and there was a main effect of time, $F(1, 43) = 4.81$, $p = .034$, $f =$

.34, with the robust-self group showing a higher overall decrease in positive affect. There was also a main effect of group, $F(1, 43) = 5.09$, $p = .029$, $f = .34$, with the robust-self group also showing higher overall positive affect. There was no time by group interaction, $F(1, 43) = 2.21$, $p = .145$.

For negative affect, the means showed a negative skew and a reflect and square root transformation was conducted. This restored normality and there was a main effect of time, $F(1, 43) = 226.95$, $p < .001$, $\eta^2_{partial} = .84$, $f = 2.0$, in which both groups reported increased negative affect after watching the trauma film. There was also a main effect of group, $F(1, 43) = 9.93$, $p = .003$, $f = .48$, in the expected direction. The vulnerable group reported higher levels of negative affect overall. There was no group by time interaction, $F(1, 43) = 1.21$, $p = .278$.

What can the trauma diary tell us?

To obtain the vividness average and the distress average, all the scores were added up in the vividness column and the distress column and then this number was divided by the number of entries. This was done for both the post-video and three day diaries. See Table 6.4 (below) for the means and standard deviations for each of the groups.

Table 6.4 *Means and Standard Deviations of Diary Variables*

Condition	Robust Group		Vulnerable Group	
	M	*SD*	*M*	*SD*
Post-video Diary				
Entries	10.96	5.16	12.65	5.06
Vividness	4.44	0.88	4.34	0.84
Distress	4.06	1.13	4.32	0.82
Three Day Diary				
Entries	6.92	5.07	9.50	3.83
Vividness	3.34	1.38	3.28	1.10
Distress	2.69	1.19	3.17	1.10

Post-video Diary. Analysis found no significant correlations between number of entries, vividness, and distress in the robust-self group. However, in the vulnerable-self group, there was a single significant positive correlation between how vivid the images were and how much distress participants reported, $r(18) = .46$, $p = .043$.

Three Day Trauma Diary. There was a strong positive correlation between how vivid the images remained and how much distress participants reported in the robust-self group $r(23) = .59$, $p = .002$. In the vulnerable-self group, there was a strong positive correlation between vividness levels and distress levels, $r(18) = .74$, $p < .001$, and a positive correlation between the number of entries and reported distress, $r(18) = .46$, $p = .041$.

How did vividness and distress levels change over time? To take a look at how vividness and distress changed between the post-video diary and the three day diary, a mixed ANOVA was run. For vividness, there was a main effect of time, $F(43) = 31.89$, $p < .001$, $f = .86$. Both groups had significant decreases in the level of vividness of the entries from immediately after the film clip to the average three days following. However, there was no main effect of group, $F(43) = .10$, $p = .755$, and no time by group interaction, $F(43) = .01$, $p = .928$.

For distress, the results showed that there was a main effect of time, $F(1, 43) = 53.31$, $p < .001$, $f = 1.11$, with both groups showing sharp decreases in distress from T1 to T2. There was no significant main effect of group, $F(1, 43) = 1.83$, $p = .184$. There was also no group by time interaction, $F(1, 43) = .39$, $p = .538$.

Mean-centered age, reported distress, concentration, and involvement were all run as covariates in ANCOVAs to see if the way the participants interacted with the film clip affected vividness and distress outcomes. None of these variables significantly altered the results.

Discussion

In this study, two groups were constructed to represent individuals who have a naturally occurring robust sense of self and those who have a naturally occurring vulnerable sense of self. The robust sense of self, as developed throughout this thesis, has shown resilience to trauma and quicker recovery to trauma. Those with a more vulnerable sense of self have shown less resilience to the negative impact of trauma and have shown slower recovery rates. This study was designed to experimentally manipulate how these two groups reacted to a trauma analogue which has been found in previous studies (Weidmann et al., 2009) to be significantly trauma-inducing. This experimental manipulation allowed for both pre- and post-trauma comparisons within group as well as between groups; thus, allowing for a better understanding of how these two groups actually react to immediate and prolonged distress caused by trauma-related stress.

The first set of analyses were between the groups on the general trait self measures that have been hypothesized to represent a holistic sense of self (i.e. self-esteem, self-concept clarity, resilience, etc.) and made up the system for determining which participants went into which group. Thus, as per the design, the robust sense of self group reliably showed significantly higher levels on each of these measures. This also included the SOC-13 which was administered on the day of the study at the beginning of the assessment booklet. Following the SOC-13, the participants were provided with the pre-trauma state sense of self measures and the mood measure and then the trauma analogue video was played. The participants were all told to try to immerse themselves into the video as much as they could and when it was over they would have two minutes to sit quietly and reflect on the clip.

As a manipulation check, the participants were then asked to answer four questions on how well they were able to engage with the clip. This analysis showed that the vulnerable-self group

reported being significantly more involved with the clip, but this did not lead to significant differences between the groups in overall distress. Further investigations were carried out to see if there were any relationships between how participants reported interacting with the film clip and immediate distress within each group. After removing the males from the correlations in the robust-self group, as gender was a significant variant in this group, a significant relationship was found between how much the female participants concentrated on the clip and how much immediate distress they reported.

Similarly, in the vulnerable-self group there were relationships between concentration and involvement as well as between involvement and immediate distress. Again this shows a trend for those who put themselves fully into the clip to report more perceived distress. Also, overall the vulnerable-self group reported more involvement in the film clip as well as higher reported distress. This supports the hypothesis that the vulnerable-self group would be less resilient to the clip as they watched it and would suffer more distress as they are less-protected against the negative impact of trauma-related stress.

At this point, the state sense of self measures can be evaluated within the groups as well as between them. Interestingly, in contingent self-esteem (CSE; a measure of maladaptive self-esteem) where a higher score reflects a less-healthy self-esteem, the robust-self group had mixed results. In the non-transformed means reported in Table 6.2, the robust-self group showed lower overall CSE than the vulnerable-self group at T1, which is what was expected. However, after the transformation the robust-self group showed higher overall levels of CSE at T1 than the vulnerable-self group, which was not expected. Nevertheless, the robust-self group did show the predicted results post-trauma as the protective nature of the more robust-self resulted in no change in CSE levels after viewing the trauma clip. This was not the case for the vulnerable-self group, and as hypothesized there was a significant increase in CSE, reflecting the often unstable nature of individual's with a more vulnerable self.

The state self-concept clarity (S-SCCS) scale also reported expected results with the robust-self group having significantly higher State-SCCS at both pre- and post-trauma time points. Also, as expected both groups showed a decrease as a result of the induced stress. Similarly, as hypothesized, positive affect was significantly higher in the robust-self group, and negative affect was significantly higher in the vulnerable-self group. Likewise, there was an anticipated decrease in positive affect for both groups, and a rise in negative affect.

Interestingly, the robust-self group showed a greater decrease in positive affect after the trauma video than the vulnerable-self group. This shows that mood may not be as resilient to immediate trauma exposure in comparison to the overall self traits. In addition, it appears that the robust-self group was more affected by the immense negativity of the trauma analogue than the already more negative vulnerable-self group. This may be due to the fact that they were not able to accommodate these negative emotions as easily. This reaction to trauma has been documented in

works by Janoff-Bulman (1992), Linley and Joseph (2004), Calhoun and Tedeschi (2013), and others when discussing the immediate and long-term effects of trauma. Thus, although this response was not hypothesized initially, it is not unexpected. Additionally, in future studies, the experiment might have benefitted from a "cooling off" period of 15-30 minutes where the state measures were given one more time. This would have provided data to see whether either group showed a quicker recovery time in the increase of positive affect and the decrease in negative affect as well as the stability of the state-self measures at a third time point.

Based on the information provided in the trauma diaries, data were compiled in order to try and understand if there was a relationship between three main variables within the two diaries: number of entries, the vividness of the experiences, and the level of distress. This final measure in the study recorded immediate post-clip findings and findings over the following three days. The diaries were analyzed quantitatively by taking an average score on how many entries were recorded, how vivid the entry was, and how distressing the entry was on a scale of 0-6 (6 being the most vivid/distressing). For the diary recorded directly after the video, the only significant correlation was between how vivid the entry was and how distressing the entry was in the vulnerable-self group. Thus, although there were many entries recorded directly after the trauma video in both groups, not all of these entries were distressing to the participants. However, images, sounds, etc. that were particularly vivid did appear to equate to more distress in the vulnerable-self group.

Interestingly, in the day three reports in both groups the results were still reporting a direct relationship between vividness of the entries and distress. This may show that the vividness of the flashbacks are directly related to the intensity of the flashbacks. Also, the vulnerable-self group reported that the number of their entries as well as vividness was particularly related to their distress. Thus, as expected the vulnerable-self group appeared to have a more complex response to the trauma analogue and were showing longer lasting negative impacts of the trauma. These participants were still experiencing frequently repeated as well as vivid intrusions and flashbacks. However, no participant reported prolonged distress past day three.

In fact, there was no significant difference in the level of distress reported by the two groups at the end of the three days, regardless of whether or not the vulnerable-self group appeared to have had a more difficult recovery during those three days. This was an unexpected finding as it was hypothesized that the vulnerable-self group would be experiencing more distress at the end of day three. This result may represent a design flaw in the study which could have been addressed by taking measurements at the end of day 1, day 2, and day 3. This would have revealed whether the robust-self group had recovered significantly sooner than the vulnerable-self group. If the study was run again, this should be included in the design.

To summarize, this experimental design looked at the way naturally occurring robust- and vulnerable-self individuals react to trauma-related stress. The study showed that these groups behaved as expected at trait and state levels on self and mood measures. The study showed that both groups were highly affected by the trauma analogue, and that they returned to a significantly lower level of distress after three days. However, this study did not find a significant difference between the two groups in distress directly after the video or at three days. As mentioned, above the three day distress level may have been less meaningful than a day by day recording of distress. Nevertheless, the hypothesis that the more robust-self group would be more protected against immediate distress was not supported. The vulnerable-self group reported being more "involved" in the clip and thus reported more frequent and vivid flashbacks, but this did not equate to a significant difference between the two groups.

This result could be related to the way the two groups were created. In a future study different measures, more measures, or a more sophisticated method of determining "robust" from "vulnerable" could help in making a more reliable difference. However, as the sense of self measures all showed significant differences in their analyses, this does not appear to be the major weakness. Instead, one may need to re-evaluate the success of the trauma analogue. Yet, again, there was a significant decrease in distress from directly after to the three day level which implies that this was a successful trauma-inducing analogue. The final problem with the design could well be the number of participants which were low and uneven between groups. However, effect size results were reasonably large throughout. Thus, it would be recommended to run a similar study with a larger population to see if there were any noticeable changes, but there is no guarantee that there would be.

Chapter 7: Using Imagery to Reinforce the Self in the Face of a Trauma Analogue

In the previous study (chapter 6), a robust-self and a vulnerable-self were examined to see how they would react to a trauma-inducing analogue and how quickly they would recover from any distress caused by this analogue. These two groups were created through a selection process which identified the "robust" versus the "vulnerable". These groups were meant to be naturally protected against or vulnerable to trauma-related distress. This was based on the premise developed in this thesis that those who have a robust sense of self are more likely to be more resilient if exposed to trauma, and vice versa. These groupings were the basis for the previous experiment, but they were not a reflection of the majority of the population. There were many more "normative" scoring participants who were not identified as high or low in self-related characteristics. This pool of normative individuals provided the basis for a possible additional, related study. This study would look at how a normative population would react to the same trauma-inducing analogue used in the previous study, but with an added experimental manipulation.

This experimental manipulation was an imagery technique that would create either a self-enhancing view of oneself or a self-depreciating view of oneself. It was hypothesized that individuals who were primed to think very positively about themselves could recreate the same overall levels of sense of self as seen in the robust sample, and conversely that those made to feel demeaned would suffer the same sense of self as seen in the vulnerable sample. This technique was based on studies that had looked at using imagery manipulation with socially anxious individuals. In particular, the study by Hulme, Hirsch, and Stopa (2012) explored how positive and negative imagery may improve self-esteem in those with social anxiety. They present a very convincing argument for the role of imagery as an important part of the Self-Memory System (SMS), as originally put forth by Conway and Pleydell-Pearce (2000), which is the system that is responsible for how a person views oneself from one situation to another.

Within this SMS system, there are three main types of memories: conceptual knowledge memories, autobiographical information memories, and specific event memories (Conway & Pleydell-Pearce, 2000; Hulme et al., 2012). See chapter 3 for more details of the SMS and other memory concepts. One aspect of this system is the development of the "working self", which is situational in nature and dictates how a person views themselves from one time point to another. By retrieving memories from each of the SMS memory types, the working self operationalizes beliefs that are in line with previous life experiences. Thus, the working memory may be biased towards more positive or negative views of the self when certain triggers are encountered such as reminders of a situation when the person felt they may have made a "fool of themselves" or they may have excelled. Depending on what cues the person receives in the situation, the working memory retrieves either a positive or negative view of itself.

Thus, for the socially anxious participants in the Hulme, et al. (2012) study, a social situation could trigger negative memories and self-images within the working memory which correlate to prior beliefs and experiences of negative social situation outcomes. If these negative images are allowed to replay and be incorporated into longer term memories, a more resistant image of a negative self could emerge and distort views of new situations.

Hulme, et al. (2012) propose that self-imagery interacts within the working self and influences how the working self is viewed and operationalized. Thus, negative self-imagery would potentially activate a negative working self and positive self-imagery would activate a positive working self. If the negative working self is active then the individual is more likely to experience what would be "symptoms" of a negative self, such as lower self-esteem. In particular, for the Hulme, et al. (2012) study self-esteem, both implicit and explicit, were used as the representation of the overall "self". Within this thesis, the self has been contextualized as the holistic combination of self-esteem, as well as resilience levels, self-concept clarity, higher positive affect, and lower negative affect. Thus, this study again focused on all of these factors when exploring the positive or negative effect of imagery and the working self.

In addition to the role of imagery within the working memory system, is the emerging evidence that imagery is particularly important in emotion processing (Hackmann, 2011; Holmes et al., 2006; Leigh & Hirsch, 2011). This research has shown that imagery is more successful at affecting mood change and protecting against trauma than verbally relayed information. There are now a wide variety of therapeutic approaches based in imagery, including guided imagery, Socratic imagery, and imagery rescripting techniques. Similarly, Gilbert (2009) discusses the benefits of compassion-focused imagery which may activate a part of the brain that helps "soothe" the self and create a safe place emotionally for individuals. This is important because if positive self-imagery is based in boosting compassion for the self as a byproduct of boosting the whole sense of self, it is likely that yet another layer of protection from trauma may emerge.

Thus, this study hypothesized that if a compassionate, positive self-image was activated in the working memory of an individual, than this might create an emotionally safer and more effective environment for the individual to be protected from trauma-inducing stimuli. This would be true in a real world setting, but also potentially in a therapeutic setting as well. For example, conventional CBT methods such as imaginal reliving which intentionally provokes traumatic memory systems or hotspots might be less trauma-inducing when situated in a therapeutic environment supported by an enhanced compassionate, positive self; promoted through a positive self-image technique.

This study was looking at how activating both positive and negative self-imagery would affect a non-clinical normative sample on various measures of sense of self after being introduced to a trauma analogue. It was predicted that if positive self-imagery could be utilized to activate a positive working self, a person would be more resilient to immediate and prolonged distress after a

trauma analogue. Conversely, if negative self-imagery could be used to activate a negative working self than the person would be less resilient and potentially more affected by exposure to a trauma analogue. To explore these hypotheses, while running the trauma analogue experiment discussed in the previous chapter (chapter 6), a second experiment was being conducted using the same basic protocols. The difference between these two studies was the participant profile and the extra experimental manipulation. The previous study focused on how the two groups with naturally occurring robust or vulnerable sense of self reacted to a trauma analogue (a traumatic film clip). In this experiment, the participants were drawn from the normative population who scored an average, healthy score on all the same preliminary measures of sense of self and resilience which were used to identify robust and vulnerable participants. This would mean that there should be no excessively high or low scorers in the participant pool and that they could be assigned randomly into the two experimental groups.

The experimental manipulation that was used was an imagery technique that was adapted from manipulations similar to those used by Hirsch, Clark, Mathews, and Williams (2003), Makkar and Grisham (2011), Stopa, Brown, and Hirsch (2012), and Hulme, et al (2012). This manipulation consisted of holding a negative or positive image in mind to influence self-views. Makkar and Grisham's (2011) study found that both those suffering from anxiety and emotional disorders, as well as those who were not, exhibit reduced self-esteem, self-concept clarity, performance confidence, and overall self-image when asked to imagine themselves negatively. Those participants asked to hold positive or "usual" images of themselves did not suffer as many negative effects as judged by themselves afterwards and by outside observers (Makkar & Grisham, 2011). Similarly, Hulme, et al.'s (2012) study found that the positive image practice found increased implicit and explicit self-esteem and was more protective against feelings of alienation than those in a negative-imagery condition.

The images used in this study, were based in real-life memories of the participant. This meant that the image was a "lived experience" for the participant and activated all the different parts of the SMS including conceptual memories, autobiographical memory, and event specific memories. The image also was required to create at least a 60% out of 100% reaction for the participant, meaning that they were greatly affected by this memory. Thus, the image that was used was more likely to activate a very strong positive or negative working memory self rather than if the image was either a fictional image or if the participant reported less than a 60% effectiveness rating. Therefore, it was hypothesized that using a lived experience memory would generate better results.

This experiment would prime the randomly assigned normative participants with the positive or negative self-imagery manipulation before the introduction of the trauma analogue. Afterwards, the groups could be compared to see if there were any significant differences on state

sense of self measures and distress variables just as in the previous experiment (chapter 6). It was hypothesized that those primed with the positive imagery manipulation would show less negative change in sense of self over time and less distress initially and over the following three days. In contrast, the negative imagery group was expected to suffer a greater negative change in sense of self over time and experience greater distress.

In addition, as mentioned above, if participants could be seen to have more protection from the trauma analogue by activating a positive, compassionate working self, raising their overall sense of self, and keeping the negative images out of the working memory, then this could be a viable treatment technique used before trauma survivors engage with reimaging and other trauma-related stress treatments in order to help reduce overall distress in such sessions. Although, this study does not address this situation directly, the foundations for further studies in this area can be seen here.

Method

Design

This study used the same mixed design and the same measures and procedures as the previous study. Differences between the studies are highlighted and similarities are summarized. This experiment tested how participants with the same sense of self and resiliency responded to an imagery manipulation before being introduced to the established trauma analogue used in the prior study (Weidmann et al., 2009).

Participants

Participants were recruited from a local university and were provided either credits or cash payment for participation. The same strict guidelines were used for the exclusion criteria: (1) anyone suffering from depression as determined by the Center for Epidemiologic Studies Depression Scale: Revised (CESD-R), (2) anyone who suffered from or witnessed a similar attack as the one portrayed in the film clip, (3) anyone who had been close to someone who had suffered a similar trauma, (4) anyone who was exhibiting PTSD symptoms, currently suicidal, and/or having past or present psychosis as determined by the Anxiety Disorders Interview Schedule, and (5) under 18 years of age.

The participants were screened with the same online survey consisting of the Rosenberg Self-esteem Scale, the Self-concept Clarity Scale, and the Resilience Appraisal Scale. This time, instead of looking for participants who were naturally high or low on these traits, the screen looked for those with the normative amounts of each. This created a homogenous pool of participants that could be randomly assigned to either a positive or negative image group. This random assignment was done via a drawing of even or odd numbers on the day of the experiment and continued until 30 participants were assigned to each group. The positive imagery group consisted of 24 females and six males (*M*age = 19.54, age range: 18-25 years), while the negative imagery group consisted of 25 females and five males (*M*age = 19.72, age range: 18-27 years). See Table 7.1 (below) for

further demographics. A chi-square test was significant for gender within the positive imagery group, $X^2(1) = 10.800$, $p = .001$, and within the negative imagery group, $X^2(1) = 13.333$, $p < .001$. A chi-square test for gender was also significant between groups, $X^2(1) = 24.067$, $p < .001$. However, a t-test showed that there was no significance for mean age, $t(55) = -0.36$, $p = .720$.

Table 7.1 *Participant Characteristics*

	Positive Imagery Group		Negative Imagery Group	
	N	(%)	N	(%)
Ethnicity				
White, British	16	(53)	19	(63)
White, Other	6	(20)	4	(13)
Black	0	(0)	0	(0)
Asian	4	(13)	5	(17)
Mixed	4	(13)	2	(7)
Other	0	(0)	0	(0)
Year at University				
First-year	19	(63)	16	(53)
Second-year	7	(23)	12	(40)
Third-year	4	(13)	2	(7)
Five-plus Undergrad	0	(0)	0	(0)
Masters/Post-grad	0	(0)	0	(0)
Other	0	(0)	0	(0)

Materials and Procedure

  Preliminary Online Trait Measures. As mentioned above, the measures on the initial online survey included the Rosenberg Self-esteem Scale (RSES; Rosenberg, 1979), Self-concept Clarity Scale (SCCS; Campbell et al., 1996), and the Resilience Appraisal Scale (RAS; J Johnson et al., 2010).

  Cronbach's α for the RSES was .77 for the positive imagery group and .56 for the negative imagery group. As with the previous study, item analyses showed a strong effect of question 8, *I wish I could have more respect for myself*, where with deletion the alphas rose to .81 and .60 respectively. However, as these measures were used to verify groupings, the item did not affect the analyses of the dependent variables and was left in. The Cronbach's α for the SCCS was .82 for the

positive imagery group and .75 for the negative imagery group. Finally, the Cronbach's α for the RAS was .94 for the positive imagery group and .70 for the negative imagery group.

Exclusion Criteria Screening Measures. Exclusion criteria were set up for this study just as they were in the previous study. Potential participants who completed the online trait measures were contacted via email to then complete the Center for Epidemiologic Studies Depression Scale: Revised (CESD-R; Eaton et al., 2004) online. If they met the eligibility requirements for the CESD-R, which were the same as in the previous study, then they were asked to come into the lab to complete the Anxiety Disorder Interview Schedule for DSM-IV: Lifetime Version (ADIS-IV-L; (Brown et al., 1994). If there were no problems with the interview, then they could begin the experiment itself.

Experimental Test Booklet. The same measures were used in the test booklet as in the previous study. These measures included the Sense of Coherence Scale: Revised (SOC-13; Antonovsky, 1987), the Contingent Self-esteem Scale (CSE; Kernis & Paradise, 2002), the State Self-concept Clarity Scale (State-SCCS; Campbell et al., 1996), the International Positive and Negative Affect Schedule – Short Form (I-PANAS-SF; Thompson, 2007), the self-report questions, and the trauma diary.

However, in this experiment there were two versions of the booklet which accounted for the addition of both a positive or negative imagery manipulation and manipulation checks. Participants were randomly assigned to either a positive or negative imagery manipulation prior to beginning the study. They were then presented with the assessment booklets appropriate to either the negative or positive group. They were asked to begin completing the booklet up to the point where the imagery manipulation started. This included the demographic section, the SOC-13, and the first set of state measures. The second set of state measures followed the trauma diary and the self-report questions.

The Cronbach's alphas for the SOC-13 for the positive imagery group was .87 and .82 for the negative imagery group. For the CSE, the positive imagery group had alphas of .76 (T1) and .81 (T2). The negative imagery group had alphas of .88 (T1) and .91 (T2). The State-SCCS had alphas of .76 (T1) and .81 (T2) in the positive imagery group and .71 (T1) and .84 (T2) in the negative imagery group. Finally, the PANAS-SF had alphas of .52 (T1) and .59 (T2) in the positive imagery group and .60 (T1) and .74 (T2) in the negative imagery group.

Imagery Manipulation. The imagery manipulation is a semi-structured interview as adapted from Stopa et al. (2012) designed to elicit either a positive or negative self-image. The participant was asked to describe a time in their past that they could recall either a positive or negative event that invoked either a self-esteem boosting or a self-esteem degrading situation. It was important that the situation that was being imagined should make the participants feel more secure in their self or more vulnerable about themselves. The researcher and participant agreed on a situation that made them feel more positive or more negative on a factor of 60% out of 100%. At

this point the participant was asked to close their eyes while questions were asked to create more detail in the "mind's eye" of the memory in as many sensory modalities as possible. Questions were prompted on sights, sounds, smells, etc. that could help the participants connect with the memory and drill down from the general memory to focus directly on how the memory made them feel about themselves. After the memory was firmly established, the participant was instructed to picture the image/memory in their mind, feeling as much of the original emotions as possible, for two minutes to reinforce the positive or negative feelings.

After the two minutes, the participants were asked to complete manipulation checks to see if there was an effect. The manipulation checks included three questions. The first was "*Using the scale below, please rate the percentage of time that you were able to hold the image in mind during the 2 min of reflection*", which had a scale of 0 – 100% representing "Not at all" to "All the time" (range of responses: 50-100, $M = 78.47$, $SD = 13.37$). The second question was "*Using the scale below, please rate how vivid the image was that you held in mind during the reflection time*", which had a scale of 0 – 10 representing "Not at all vivid" to "Extremely vivid" (range of responses: 2-10, $M = 7.90$, $SD = 1.50$). Finally, the last question was "*Using the scale below, please rate how positive/negative the image made you feel about yourself during the reflection time*". This was also on a scale of 1 – 10 representing "Not at all" to "Extremely" (range of responses: 3-10, $M = 7.78$, $SD = 1.67$).

Trauma Analogue Video. The trauma analogue for this study was the same clip that was used in the previous study. The film clip was intended to temporarily induce frequent intrusive and possibly distressing thoughts and images following the viewing based on Weidmann et al.'s (2009) research. Just as with the previous study, and as set forth by Weidmann et al. (2009), the participants were given written instructions concerning viewing the film clip before it started:

> For the next 15 minutes, we will show you a film. It is important that you keep concentrating on what is happening in each scene. Please try to watch each scene completely. If possible, try not to get distracted from the film, do not turn your head or look away. While watching the film, please imagine yourself being a close witness at the scene. For the purpose of our study, it is important that you let go of whatever reactions you may have and that you do not suppress them. (Weidmann et al., 2009)

If the participant was in any distress and asked to stop the viewing, a brief relaxation and de-stressing procedure was undertaken. However, no participants pulled out from this study. After the trauma analogue video was viewed, the participants were instructed that they would be left for two minutes alone to reflect quietly on what they had seen.

Trauma Diaries. Using the same procedures as in the previous study, trauma diaries (see Appendix B) were given to the participants: once immediately after the two minutes of quiet reflection and then again for the three days following the experiment. Before participants completed the trauma diary, they received a verbal explanation of what was expected from them

and they were given a chance to ask questions concerning the procedure. They were also given detailed written instructions on how to complete the diary as seen in Appendix B.

Reported Measures of Distress, Involvement, and Concentration. The same self-report items of distress, involvement, and concentration were measured by asking the questions designed by Weidmann et al. (2009): (1) "*How distressing did you find the clip?*", (2) "*How involved have you been in what happened in the film clip?*", and (3) "*How well were you able to concentrate on the film?*". The scale used by Weidmann et al. (2009) was 1 (not at all) to 6 (very much). Weidmann et al. (2009) rated scores of 3 or more as a reasonable level of stress/distress. They also determined familiarity with the film by asking the participants if they had seen the movie before (Weidmann et al., 2009).

As in the previous experiment, these questions were particularly important as they acted as a type of manipulation check for how well the participant felt they were affected by the film clip. These responses could be used to help better understand if variations in distress were related to the hypothesized differences in self-variables or to discrepancies in how the film was viewed.

Results

Descriptives of both groups.

Table 7.2 (below) reports the means for each of the measures by group. Within the analyses some of the means were transformed to restore normality as per the Shapiro-Wilk's test ($p < .50$). However, all the means in Table 7.2 are non-transformed means for ease of comprehension.

Table 7.2 *Means and Standard Deviations for the Positive and Negative Imagery Groups*

Measure	Positive Imagery Group		Negative Imagery Group	
	M	SD	M	SD
RSES	20.93	3.04	21.70	2.32
SCCS	37.87	6.92	40.27	5.50
RAS	46.87	8.12	47.93	3.46
SOC-13	64.37	10.54	62.30	9.38
T1 CSE	50.27	6.63	48.50	10.42
T2 CSE	49.93	7.23	50.47	10.93
T1 State-SCCS	14.33	3.08	15.37	2.66
T2 State-SCCS	14.60	3.02	14.33	3.61
T1 PA	14.77	2.92	13.53	2.86
T2 PA	12.07	3.15	12.53	3.38
T1 NA	6.40	1.35	6.63	1.67
T2 NA	10.23	3.46	11.13	3.83

What were the differences between the groups for the trait sense of self measures?

As expected from the randomly assigned groupings, there were no significant differences between the two groups. The results for the sense of self measures were as follows: RSES, $t(58) = -1.10$, $p = .277$, SCCS , $t(58) = -1.49$, $p = .143$, RAS, $t(58) = -.66$, $p = .511$, and SOC-13, $t(58) = .80$, $p = .426$.

How successful was the self-imagery manipulation technique?

There was no significant difference in the percent of time the two groups were able to hold either negative or positive images in their mind. Likewise, the two groups did not differ on how vivid the images appeared to them. However, there was a significant difference between the two groups on how positive/negative the image made them feel about themselves during the reflection time, $t(57) = 4.40$, $p < .001$, $r = .50$.

The imagery manipulation had differential effects on the two groups. Participants in the negative imagery group felt less negative about themselves compared to how positive the positive imagery group felt about themselves, i.e. the degree of the valence shift following the imagery manipulation was greater in the positive than in the negative group.

Table 7.3 *Means and Standard Deviations for the Imagery Manipulation*

	Positive Imagery Group		Negative Imagery Group	
	M	*SD*	*M*	*SD*
% of Time in the Mind	78.00	10.64	78.97	15.89
Vividness of Image	8.17	1.39	7.62	1.57
Effect on Self-Image	8.60	1.04	6.93	1.79

How well were the participants able to focus on the film?

Just as before, the participants were asked four single item questions concerning how well they were able to engage with the film clip. In this experiment, three male participants (two positive imagery; one negative imagery) reported having seen the movie/clip. As with the previous study, the question regarding involvement invoked the most clarification from the participants, and they were prompted to answer how well they felt they put themselves into the film while watching it. The questions on distress and concentration appeared to be clearer for the participants. The questions were asked on a Likert-scale of 1 (not at all) to 6 (very much). The means and standard deviations for the single item self-report questions are in Table 7.4 (below).

These questions were particularly important as they acted as a manipulation check for how participants felt they were affected by the film clip. These responses were analyzed in relation to

each other to look for correlations between how well they reported interacting with the film and how much perceived distress they claimed directly after watching.

Table 7.4 *Means and Standard Deviations for the Four Single Item Questions*

| | Positive Imagery Group | | Negative Imagery Group | |
	M	*SD*	*M*	SD
Reported Distress	4.93	.98	5.40	1.07
Involvement	4.27	1.51	4.40	1.25
Concentration	5.03	.81	5.10	.66

To better understand how the two groups reported being affected by the film clip each of the variables were compared. There was no significant difference between the two groups on how many people had viewed the film, $t(58) = .58$, $p = .561$, on how much involvement they reported, $t(58) = -.37$, $p = .710$, or on how well they were able to concentrate on the film, $t(58) = -.35$, $p = .728$.

However, the difference between the groups on how much distress they reported directly after viewing the film clip was approaching significance, with the negative imagery group having a higher reported distress, $t(58) = -1.76$, $p = .083$, $r = .23$.

As in the previous study, to better understand how interaction with the film clip may have affected how distressing it was for the viewer, correlations were conducted to look for possible relationships. In the positive imagery group there was one significant positive correlation between how involved the participant was and how well they reported concentrating on the film, $r(28) = .39$, $p = .034$. In the negative imagery group, there were three significant correlations: a negative correlation between involvement and having seen the film, $r(28) = -.36$, $p = .049$, a positive correlation between how involved they were and how much distress was reported, $r(28) = .68$, $p < .001$, and a negative correlation between how much distress was reported and whether they had seen the film previously, $r(28) = -.42$, $p = .020$.

What was the impact of the trauma analogue on the state sense of self?

Contingent Self-Esteem. A Shapiro-Wilk's test showed a violation of normality on the T2 CSE measure ($p = .020$), but a transformation was not successful at restoring normality so the repeated measures ANOVA was run without transformations. There were no main effects of time, $F(1, 58) = 2.48$, $p = .121$, or of group, $F(1, 58) = .074$, $p = .787$. There was, however, a group by time interaction, $F(1, 58) = 4.91$, $p = .031$, $f = .29$. There was no significant difference between groups at either time point, $t(58) = .78$, $p = .437$ and $t(58) = -.22$, $p = .824$. However, as expected, the negative imagery group's contingent self-esteem increased significantly after viewing the video

clip (i.e. became more negative), $t(29) = -2.50$, $p = .018$, $r = .42$, while the positive imagery group showed no change in CSE, $t(29) = .492$, $p = .626$.

State Self-Concept Clarity Scale. There were very negatively skewed results for the state-SCCS at both time points, thus a reflect square root transformation was used to restore normality. This did not result in a main effect of time, $F(1, 58) = 1.96$, $p = .167$, or group, $F(1, 58) = .45$, $p = .507$. However, there was a time by group interaction, $F(1, 58) = 6.32$, $p = .015$, $f = .33$, as the negative imagery group's state self-concept clarity increased significantly after watching the video clip, $t(29) = -2.23$, $p = .034$, $r = .38$, while the positive imagery group showed no change, $t(29) = 1.17$, $p = .252$. There was also no significant difference between groups at either time point, $t(58) = 1.46$, $p = .150$ (T1), and $t(58) = -.10$, $p = .924$ (T2).

International Positive and Negative Affect Schedule – Short Form. For positive affect no transformations were needed and there was a main effect of time, $F(1, 58) = 160.39$, $p < .001$, $f = 1.66$, with both groups decreasing in overall positive affect. There was no main effect of group, $F(1, 58) = .48$, $p = .493$, however, there was a time by group interaction, $F(1, 58) = 4.58$, $p = .037$, $f = .28$. There was no significant difference between groups at T1, $t(58) = 1.65$, $p = .104$, or T2, $t(58) = -.67$, $p = .506$. However, a paired samples t-test found that the positive imagery group significantly decreased from T1 to T2, $t(29) = 9.46$, $p < .001$, $r = .87$, as did the negative imagery group, $t(29) = 8.45$, $p < .001$, $r = .84$. The interaction showed that positive affect was affected more from T1 to T2 in the positive imagery group than in the negative imagery group. The positive imagery group started with more positive affect than the negative imagery group, but ended with a lower positive affect mean than the negative imagery group at T2.

For negative affect, the means showed an extremely high positive skew, thus a log10 transformation was conducted. This restored normality and there was a main effect of time, $F(1, 58) = 486.86$, $p < .001$, $f = 2.00$, with both groups significantly increasing in negative affect. However, there was no main effect of group, $F(1, 58) = .77$, $p = .382$, and no time by group interaction, $F(1, 58) = .48$, $p = .491$.

What can the Trauma Diary tell us?

Just as in the previous experiment, the trauma diary data were compiled on the number of entries, the vividness of the items, and the distress level of the item. See Table 7.5 (below) for the means and standard deviations for each of the groups.

Table 7.5 *Means and Standard Deviations of Diary Variables*

Condition	Positive Imagery Group		Negative Imagery Group	
	M	SD	*M*	SD
Post-video Diary				
Entries	11.93	4.19	12.40	4.44

Vividness	4.73	.82	4.23	1.07
Distress	4.22	1.04	4.06	1.03
Three Day Diary				
Entries	7.90	5.76	8.40	5.54
Vividness	3.17	1.57	3.55	.87
Distress	2.39	1.33	3.08	1.19

Post-video Diary. As in the previous study, to investigate the relationship between the numbers of entries, the vividness of the entries, and the distress reported on each entry correlations were conducted. The analysis found that there was a single significant positive correlation between how vivid the images were and how much distress was reported in both the positive imagery, $r(28) = .64$, $p < .001$, and negative imagery groups, $r(28) = .71$, $p < .001$.

Three Day Trauma Diary. The positive imagery group showed positive correlations between all the variables including how many entries were recorded and how vivid the images remained, $r(28) = .43$, $p = .017$, how many entries were recorded and the level of distress reported, $r(28) = .56$, $p = .001$, and how vivid the images remained and the level of distress reported, $r(28) = .66$, $p < .001$. In the negative imagery group, the analysis found that there was a single strong positive correlation between vividness and distress levels, $r(28) = .55$, $p = .002$.

How did vividness and distress levels change over time? To investigate how vividness and distress changed between the post-video diary and the three day diary, a mixed ANOVA was run. For vividness, there was a main effect of time, $F(1, 58) = 42.07$, $p < .001$, $f = .85$, with both groups showing significant decreases in vividness levels over time. There was no main effect of group, $F(1, 58) = .059$, $p = .809$. However, there was a group by time interaction, $F(1, 58) = 6.53$, $p = .013$, $f = .34$. The positive imagery group had a significantly higher T1, $t(58) = 2.02$, $p = .048$, $r = .26$, vividness score than the negative imagery group. However, at T2, there was no difference between the two groups, $t(58) = -1.17$, $p = .248$.

Looking at distress levels, there was a main effect of time, $F(1, 58) = 76.34$, $p < .001$, $f = 1.15$, with both groups showing significant decreases in distress over time. However, there was no main effect of group, $F(1, 58) = 1.12$, $p = .294$. There was a group by time interaction, $F(1, 58) = 6.99$, $p = .011$, $f = .35$. There was no significant difference between groups at T1, $t(58) = .60$, $p = .551$, but there was at T2, $t(58) = -2.12$, $p = .038$, $r = .27$. Directly after viewing the trauma analogue, both groups suffered similar distress, however, after three days the positive imagery group's distress levels had fallen significantly lower than the negative imagery group's.

Discussion

In this study, it was predicted that a person's overall sense of self could be potentially reinforced through creating a positive working self by introducing positive self-imagery. This

reinforced sense of self would be more robust and more resilient to trauma and prolonged distress. Similarly, a person who was exposed to negative self-imagery would activate a negative working self which could lead to a more vulnerable sense of self. These individuals were believed to be more vulnerable to trauma and prolonged distress. This theory was based on the research that has been often referenced in this thesis concerning resilience and self-esteem (Antonovsky, 1987; Ehlers & Clark, 2000; Kobasa, 1979; Seligman, 2002; Waysman, Schwarzwald, & Solomon, 2001) as well as that on the effect of imagery manipulations (Hirsch, Mathews, Clark, Williams, & Morrison, 2003; Hirsch, Mathews, Clark, Williams, & Morrison, 2006; Pearson, Deeprose, Wallace-Hadrill, Heyes, & Holmes, 2013; Stopa, 2009).

The participants in this study were all university students and held a normative level of self-esteem, self-concept clarity, etc. This allowed for the study to be completely randomly assigned. This was confirmed by initial t-tests that showed there were no significant differences between the groups at the beginning of the study on any of the state measure of sense of self. The first set of state measures were then followed by the imagery technique. Results on the effects of the imagery technique did not show any differences between how the groups were affected initially on how well they were able to engage with the image.

However, there was a significant difference between the overall effects of the manipulation, showing that the positive imagery group ended up feeling more positively about themselves afterwards. The negative imagery group reported that they did not feel as negatively about themselves in comparison. This was an important result as the imagery technique was expected to influence the results on each of the repeated measures of sense of self and distress that would be coming after the trauma analogue and this disparity could have a compound effect later in the study. It should be noted here that a control group exposed to a neutral image would have provided a good way of knowing to what extent the positive or negative manipulation affected the participants. This should be included in any further study.

Following the imagery manipulation, the participants were asked to sit through the video clip that acted as our trauma analogue and then sit quietly and reflect on the clip for two minutes afterward. Neither group reported any significant difference in the way they engaged with the film, but they did differ on how much reported distress they experienced. In fact, as predicted in the hypothesis the negative imagery group reported significantly more immediate distress after viewing and reflecting on the clip. This was an interesting result due to the fact that the negative imagery group had originally reported feeling less affected by the self-image manipulation, and thus there was a possibility that the negative imagery group would not have any perceived difference in distress. Nevertheless, this could have been due to an even greater protective effect of the positive imagery manipulation lowering the positive imagery group's reported distress, or it could have been due to a greater effect by the negative self-image manipulation than the negative imagery

participants anticipated. In addition, the correlations ran on the manipulation showed there was an expected relationship between lower distress amongst those few who had previously seen the film, and higher distress amongst those who reported being highly "involved" in the clip in both groups.

Within the state sense of self measures there was the contingent self-esteem scale, the state self-concept clarity scale, and the I-PANAS short form for mood. The contingent self-esteem scale is different from the Rosenberg (RSES, 1979) scale as higher contingent self-esteem is considered maladaptive where higher scores on the traditional RSES is considered beneficial. The results herein showed that the positive imagery group had no significant change in CSE, thus, reinforcing the idea that the positive working self was providing a protective effect. This was the same for the state self-concept clarity scale, as there was no change in levels for the positive imagery group. However, the negative imagery group showed expected levels of vulnerability as their contingent self-esteem increased showing increased maladaptive features. Likewise, their state self-concept clarity also increased significantly. Although higher scores are generally more adaptive, this rise after the trauma analogue may represent a hardening of their views of themselves as a direct reaction to comparing themselves with the individuals in the video clip. The polarizing effect of putting distance between the individuals in the clip and one's own identity for the more vulnerable, unstable negative imagery participants may have led to this increase, while the more protected positive imagery participants did not feel the need to react.

For the mood measure, the international positive and negative affect schedule – short form (I-PANAS-SF), reactions were as predicted. Positive affect decreased significantly in both groups and negative affect increased significantly in both groups. It was hypothesized that the intensity of the trauma analogue would affect immediate mood more than any of the other state traits. However, there was an interesting effect within the positive imagery group that was not hypothesized, but is also not abnormal. The positive and negative imagery groups had virtually indistinguishable pre-trauma positive affect. However, the positive imagery group instead of showing signs of protection against the decrease in positive affect seem to have suffered more. This result was found in the previous study as well. It appears as if the "bubble" of created positivity that this group was experiencing felt a greater response to the negativity of the trauma analogue. As reported in the previous chapter, this reaction to trauma has been documented in other works (Calhoun & Tedeschi, 2013; Janoff-Bulman, 2004; Linley & Joseph, 2004). Thus, although this response was not hypothesized initially, it is not unexpected and reinforces the findings in the naturally occurring robust-self participants. The dramatic increase in negative affect was also as expected and was felt equally by both groups.

The final measure in the study was the trauma diary that was recorded post video and over the following three days. The diaries were analyzed quantitatively by taking an average score on how many entries were recorded, how vivid the entry was, and how distressing the entry was on a scale of 0-6 (6 being the most vivid/distressing). For the diary recorded directly after the video, the

only significant correlation for both groups was between how vivid the entry was and how distressing the entry was. Similarly, there was no difference between how distressed the two groups were immediately after watching the clip. Thus, although there were many more entries recorded directly after the trauma, not all of these entries were distressing to the participant. These entries often included visual stimuli such as red flashing lights or loud music that was repetitive directly after the clip, but did not hold any distressing connotation. However, images, sounds, etc. that were particularly vivid did often show a relationship to immediate distress,

However, at day three the results were different for the two groups. The positive imagery group had significantly less reported overall distress by the end of day three than the negative imagery group showing expected levels of protection and recovery rates within the positive imagery group. Similarly, this reflected slower recovery rates and more prolonged distress in the negative imagery group as hypothesized. However, interestingly, the negative imagery group was still reporting a direct relationship between vividness of the entries and distress. This may be implying that the activation of the negative working self and the negative imagery prime had opened up more negative emotional processing which encoded the vividness of the flashbacks more intensely for the negative imagery group, thereby, creating more vivid, longer lasting distressing flashbacks. In contrast, the positive imagery group reported that the number of their entries as well as vividness was particularly related to their distress. Thus, for those that were still experiencing repeated intrusions and flashbacks, they remained more distressed, although, overall this was significantly less than in the negative imagery group. Consequently, the imagery manipulation appears to have been successful at creating a protective positive working self for the positive imagery group, and just as successfully creating a more vulnerable negative working self for the negative imagery group.

As discussed in the introduction, there is interest in how these results might be generalized to therapeutic designs, or more specifically studies that look into the relationship between imagery techniques and CBT treatments. These results provide a foundation for further research in this area as there were significant positive relationships found between the positive imagery group and a positive, protective working self. This would imply that using imagery manipulations in a therapeutic environment could provide a protective, positive working self before engaging in traditional CBT and other treatment programs for trauma-related stress. If positive imagery manipulations are utilized at the beginning of a trauma-reliving (or similar treatment) program, there is a high probability that the patients would be able to cope better with the traumatic aspects of the treatments and recovery more quickly from any trauma induced in the sessions. Further studies on the protective nature of a positive working self and positive imagery manipulations specifically related to trauma-inducing environments should be conducted, but this study shows very positive trends for this theoretical treatment technique.

Chapter 8:   General Discussion

The aim of this thesis was to better understand trauma-related stress from the perspectives of positive psychology in relation to a healthy, robust sense of self. It was hypothesized that a robust sense of self contributes to a more resilient person in the face of traumatic experiences. Thus, the first aim of the research was to determine what constitutes a robust sense of self and then to establish whether there is any evidence that a robust sense of self is at all protective in the face of traumatic experiences or when recovering from trauma symptoms. An extensive literature review into characteristics of the self that are considered beneficial to health and wellbeing revealed several recurring attributes. These included high self-esteem, stable self-concept clarity, higher resilience levels, a stable sense of coherence, good coping skills, high positive affect, and low negative affect. It was our hypothesis that rather than looking at these attributes alone, the combination of all of these attributes in a single person would provide the most robust "sense of self", and so we used this as our holistic term throughout the research in this thesis. Furthermore, the more of these beneficial attributes a person had, the more robust the sense of self was deemed to be, and the fewer of these attributes that a person had, the more vulnerable the sense of self was deemed to be.

When looking at trauma itself the wounding of the self was an important part of the definition of trauma. However, this wounding is expressed through certain diagnostic symptoms including intrusive thoughts about the trauma and flashbacks that can make the victim feel as if they are reliving the trauma. Thus to determine if the holistic sense of self was actually protective in the face of trauma or would aid in increasing recovery times from an existing trauma, we needed to see if there was any relationship between a robust sense of self and these common trauma symptoms. If the characteristics associated with a robust sense of self could promote greater resistance to trauma symptoms such as intrusive thoughts and flashbacks, then it might be possible to focus on bolstering the sense of self as a part of the treatment of these symptoms. In order to test whether the robust sense of self could protect against the onset of trauma symptoms such as intrusive thoughts and flashbacks and possibly aid in quicker recovery from a traumatic experience, two experiments were conducted. Both of these experiments were meant to help us better understand the benefits of the robust sense of self in the face of trauma.

In the first study, an experimental design used a trauma analogue to evaluate the resilient nature of an inherently robust sense of self versus a vulnerable sense of self. The trauma analogue was used to create temporary trauma symptoms such as distress, intrusive thoughts, and flashbacks. The study utilized healthy participants from a UK university who were screened for a naturally occurring "robust" or naturally occurring "vulnerable" sense of self. The individuals were put into the robust-self group if they scored highly on measures for trait levels of self-esteem, self-concept

clarity, and resilience. Likewise they were placed in the vulnerable-self group if they had low scores. Refer to Chapter 6 for details on how this process was achieved.

On the day of the experiment the test booklet included state measures of the self both before and after watching the trauma analogue. As trait measures are related to state measures of the self, it was predicted that individuals would score similarly on state measures of the self on the day of the experiment. Also it was predicted that the robust-self group would be more resilient to the trauma analogue and show less change at the second time point on the same state measures as well as showing less signs of distress via intrusive thoughts and flashbacks. Subsequently, it was also predicted that this group would recover more quickly from any trauma-related stress acquired through the experiment over a three day period. Contrastingly, the vulnerable-self group would have lower, less stable profiles and experience more distress for a longer period.

The second study was set up almost exactly the same way as the first. However, the second study recruited student participants that scored normative results on screens for trait self-esteem, self-concept clarity, and resilience. The second study then utilized an additional experimental manipulation consisting of an imagery technique to try and enhance or inhibit the sense of self of the normative sample. The experimental manipulation that was used was an imagery technique that consisted of holding a negative or positive image in mind to influence self-views. Studies such as one by Makkar and Grisham (2011) found that both those suffering from anxiety and emotional disorders, as well as those who were not, exhibit reduced self-esteem, self-concept clarity, performance confidence, and overall self-image when asked to imagine themselves negatively. Those participants asked to hold positive or "usual" images of themselves did not suffer as many negative effects as judged by themselves afterwards and by outside observers (Makkar & Grisham, 2011).

Similarly, a study by Hulme, et al. (2012) found that their positive image practice found increased implicit and explicit self-esteem and was more protective against feelings of social exclusion than those in a negative-imagery condition. Such research has shown that when positive images of oneself are activated in the working self, there are increases in self-esteem, and when negative images are held in the working memory system, individuals feel more negatively about themselves (Colette R. Hirsch et al., 2003; Hulme et al., 2012; Makkar & Grisham, 2011; Stopa, Brown, Luke, & Hirsch, 2010). Thus, in the second experiment both a positive and negative imagery technique were randomly assigned to the participants to evaluate whether activating positive or negative images would directly affect the sense of self and indirectly affect the way in which the traumatic experience affected the participants.

Study 1

The results of the first study were mixed. It was predicted that both groups would have similar profiles on initial state measures of sense of self on the day as compared to their trait profiles, and that the robust group would maintain these levels after the trauma analogue was

introduced while the vulnerable group would likely be less stable. The results from the state measures of self were consistent with predictions. The robust-self group maintained more stable state sense of self levels on the contingent self-esteem scale and the state concept-clarity scale while the vulnerable-self group showed less stable results. However, both groups showed significant effect on mood with increases in negative affect and decreases in positive affect.

In addition, results were not as predicted for distress levels as they were high in both groups directly after watching the film clip, showing no immediate "protective" factor in the robust group. In fact, there was no significant difference in distress between groups directly after the trauma analogue or at day 3. It was hypothesized that the robust group's naturally occurring heightened resilience and trait sense of self levels would be more protective against intrusive thoughts and flashbacks and that it would promote quicker recovery rates. Unfortunately, the initial significant increase in negative affect, significant decrease in positive affect, and the reported distress at both time points all support a lack of immediate or prolonged "protection" in the robust group.

However, although there is no clear evidence of enhanced recovery rates in the study due to the fact that there was no significant difference in levels at day 3, there was a design flaw in the study that could have told more about the recovery rates. The diary that was kept by the participants was not time stamped which could have revealed whether the more robust group had lower distress rates earlier than the vulnerable group. Further studies of this nature should be sure to include time stamping of entries into the 3-day diary.

It is also possible that the screens that were used to establish a naturally occurring robust sense of self did not work as we had anticipated. As the criteria for creating the "robust self" were designed for this study, it may be that we did not use sufficiently high enough cut-off points. However, as we struggled to find significant numbers of participants at the cut-off we designed, it is likely that we would have had almost no participants eligible for the study if we increased the cut-off levels any more. So if this study was duplicated with a much larger sample, it might be worth raising these cut-off scores. Finally, it is possible that the initial hypothesis that a robust sense of self can protect against traumatic experiences may be wrong. Although the state sense of self measures remained unchanged, there was still a large amount of distress in both groups. This may reflect that even when the sense of self is stable and robust, it may not be enough on its own to "protect" against significant distress. This was one of the reasons that a second study was planned with the addition of a positive imagery technique.

Study 2

In the second study, which was conducted with virtually the same methodology as the first, an experimental manipulation utilizing an imagery technique was added. Based on research into positive imagery and self-esteem, it was hypothesized that positive imagery could activate a

positive working self that would enhance the sense of self and promote more resilience. It was predicted that an enhanced working self could potentially show the same levels of resilience as a naturally occurring robust sense of self. Similarly, it was hypothesized that negative imagery could potentially reduce normative individuals to the same levels of resilience as the naturally occurring vulnerable-self group.

As expected the study reported higher resilience and more stable state sense of self levels in the positive imagery group similar to that of the robust-self group. However, just as with the first study, the second study found increased negative affect and decreased positive affect as well as no significant differences in the level of distress between groups immediately after viewing the trauma analogue. This may imply that significant traumatic events may overwhelm even the most robust individuals at the time of the trauma, and that recovery rates may reflect the true nature of how the robust sense of self truly "protects", if it does at all. Indeed, unlike in the first study, the positive imagery group did show a significant reduction in distress at the end of day three in comparison to the negative imagery group with significantly fewer intrusive thoughts and flashbacks as well as a greater reduction in the intensity of any remaining distressing images and thoughts.

These results may show that even in more resilient individuals initial distress is likely and this is consistent with trauma research that shows the greatest amount of trauma symptomology is seen within the first few days of an incident (Ehlers, 2010; Ehlers & Clark, 2000). Prolonged symptomology is less likely in the majority of cases and when it does occur it is a sign of more significant distress disorders such as in fully developed posttraumatic stress. Thus, the fact that there were improved recovery rates at day three seen through the significant decrease in distressing thoughts and images in the positive imagery group reflects the success of the inclusion of the positive imagery technique. The hypothesis in this experiment was that the enhancement of the holistic sense of self by the imagery technique would lead to the more rapid reduction of intrusions and flashback induced via the trauma analogue, which was supported in the second study. However, further research should be conducted into the relationship between the sense of self and positive imagery in order to determine the mechanisms at work between the two to maximize the benefit of this technique.

The results from the second study showed the most promise for the effects of a robust sense of self when activating a positive working self through a positive imagery technique. This study utilized a normative sample, but was successful at creating an "enhanced" self by activating a positive working self which was more resilient and showed quicker recovery rates from intrusions and flashbacks caused by the trauma analogue. In the end, the combination of the results of these studies showed that although the robust sense of self was not always a consistent resiliency factor as hypothesized, the addition of the imagery technique was superior in creating a protective factor in the face of trauma-inducing events.

Limitations

As mentioned previously, there were various limitations to the design and implementation of the two experiments. The first issue with the study is the lower sample numbers. Although, the effect sizes were moderate in each of the studies, they would have benefited a great deal from a broader sample and greater numbers. Similarly, as these studies were not able to consent and obtain clinical participants, we are not able to say whether these results are generalizable to a clinical population.

In the first study, the way the two groups were developed was also a potential limitation. We set up cut-offs and created an algorithm that would represent a "robust-self" and a "vulnerable-self" from the three measures that were selected as screens. These cut-offs were adapted to enable us to have as robust or vulnerable a sample as we could from the student population. To find students that fit this algorithm was more difficult than we initially expected and this greatly reduced the pool of possible participants. Thus, it would be worth re-evaluating the way the algorithm was developed or having access to a much larger population. Similarly, trying to use multiple measures in this way may not have been as practical as it was originally conceived, and sticking to a single measure of resilience might have been a better way to screen participants.

Additionally, it was determined that the experimental booklet would have benefitted from a third time point for the state measures. This would have provided us with a better idea of recovery rates on these measures and in particularly the mood measure. Likewise, as mentioned several times already, the distress diary should be date stamped for each day over the three day period so that recovery rates can be more accurately assessed. In fact, with the increase in technology an application for smartphones or tablets could provide a real-time monitoring of symptoms as they occurred providing even more valuable data.

As touched upon in the previous section, the research and literature review showed the benefit of positive imagery on the self and self-esteem in particular. This was used as a basis for our hypothesis that using a positive imagery technique would enhance the sense of self and thereby create even more protection against traumatic experiences. The results of the second study did show results that supported the benefit of the positive imagery technique, however, the study is limited in its interpretation of how the technique worked. It would be good to continue to explore how the positive imagery technique interacts with the different attributes of the self to expand on the relationship between the holistic sense of self as developed within this research and the imagery technique as it has been studied previously.

Finally, the literature review into health and wellbeing revealed one further factor that was not originally anticipated, and that was the extremely important role of meaning-making in life. It was not something we were expecting to discover as a stand-out factor, but in fact throughout the literature review it was found that when an individual felt that there was meaning in the

individual's life regardless of (or even due to) the trauma experienced, there was more resilience and overall greater wellbeing. This was seen in the discussion in Chapter 2 on salutogenesis and positivity, and in particular in Chapter 5 on posttraumatic growth.

From these readings it would appear that meaning-making is just as essential to wellbeing as the other self-attributes included in our holistic sense of self. In fact, when meaning-making was factored into the recovery process from a traumatic event it correlated even more significantly with future posttraumatic growth (Calhoun, Cann, Tedeschi, & McMillan, 2000; Maercker & Zoellner, 2004; S Nolen-Hoeksema & Davis, 2004; Triplett et al., 2012). It seems that a strong sense of self, positivity, resilience, and meaning-making combine to help trauma victims to not only overcome their traumas, but to reach a point of perceived thriving and long-lasting wellbeing that staid with them throughout their lives. Although, the literature review showed the value of meaning-making in recovery from traumas, the experimental designs in the two studies did not include any measures or analysis of meaning-making. Future studies that are conducted on the influential and protective nature of the robust sense of self and positive images should consider adding meaning-making as a new variable to evaluate the potential benefits.

Conclusion

Research into trauma symptoms focuses on maintaining factors such as negative thoughts about the self, self-blame and feelings of helplessness surrounding the trauma. In an attempt to find ways in which to counteract these elements of trauma symptomology, a literature review was done to look into the relationship between the self and trauma. It was quickly established that even the very definition of trauma held an element of the self, and that the maintenance of trauma symptoms is highly related to self variables. Thus, out of this review the attributes of the self that have been shown in research to promote health, well-being, and resilience the most included high self-esteem, stable self-concept clarity, stable sense of coherence, high positive affect, and low negative affect. Thus, these were the attributes we used in our holistic sense of self. Additionally, research into self-esteem specifically uncovered the benefits of a using a positive self-image technique based on autobiographical memory to enhance the individual's sense of self and potentially activate a more robust sense of self, albeit temporarily.

Although, the robust self is not a unique concept and many studies have contributed to self-attribute research and the role of a strong self in healthy living, it was the combined ideas from positive imagery, the salutogenic understanding of stressors, and the relationship of the entire sense of self (high self-esteem, stable self-concept clarity, high positive affect, and low negative affect) as a resilience factor that was unique in this research. The results of the two studies supported these concepts and our claims of the existence of a holistic sense of self as both studies showed significant correlations between each of the self attributes.

However, the first study did not show conclusively that these attributes alone would help reduce the impact and duration of trauma symptoms such as intrusions and flashbacks induced

through the trauma analogue. Nevertheless, the second study allowed us the chance to include the positive imagery technique which did show results in creating quicker recovery rates from distressing intrusive thoughts and flashbacks after viewing the same trauma analogue. Thus, these results show that there is potential for using positive image techniques in work with sufferers of trauma symptoms by activating the positive working self before engaging in therapies such as imaginal reliving and other such treatments. Having this positive working self could help to protect the individual during the sessions as they approach "hotspot" memories and then allow for quicker recovery times after these sessions. If individuals felt that therapy would be less painful they might be more willing to engage fully with treatments and decrease drop-out rates.

Obviously, the research here is just a start, but it does support current theories on trauma which claim that the views about the self and self-blame can be significant components of symptom maintenance (Ehlers, 2010; Ehlers & Clark, 2000). Where we were able to create a positive image of the self and where we were able to promote a more robust sense of self, we were able to reduce the intensity and duration of intrusions and flashbacks induced through a trauma analogue.

The salutogenic approach and positive psychology have opened up research into what keeps people healthy and what helps healthy people thrive. Medicine and psychology no longer need to solely focus on what's wrong with a person, but also what's right with people. Understanding what characteristics may help maintain good health or help ill people recover quickly is a valuable scientific endeavour. The fewer people who are submerged under Aaron Antonovsky's (1987) river of ease/disease means fewer people in distress and fewer people in need of treatment. Strengthening individuals, or creating more resilient individual's, means less strain on the health system and more patient centred care for those who are truly in need of treatment and support. In the end, it is creating the most effective form of resilience to and treatment of illness that motivated the research in this thesis.

Chapter 9:   Appendices

Appendix A: Posttraumatic Stress Disorder

Under DSM-5, post-traumatic stress disorder (PTSD) is an anxiety disorder that develops in relation to an event which creates psychological trauma in response to actual or threatened death, serious injury, or sexual violation. The exposure must involve directly experiencing the event, witnessing the event in person, learning of an actual or threatened death of a close family member or friend, or repeated first-hand, extreme exposure to the details of the event. Traumas experienced may involve war, natural disasters, car accidents, sexual abuse and/or domestic violence. A formal diagnosis of PTSD is made when the symptoms cause clinically significant distress or impairment in social and/or occupational dysfunction for a period of at least one month. The symptoms cannot be due to a medical condition, medication, or drugs or alcohol.

PTSD Symptoms

PTSD symptoms may include nightmares, flashbacks, sleep disturbance, mood disorders, suicidal ideation, avoidance, and hyper-arousal in response to trauma-related stimuli. Hyper-arousal may include an increase in blood pressure and heart rate, hyperventilating, mood swings, fatigue, or insomnia when a memory of the event is triggered by some type of internal (cognition) or external (environmental) stimulus. Common symptoms related to PTSD would include insomnia, attention deficit problems, and anhedonia. Common comorbid disorders are depression, anxiety, and substance addiction.

Under DSM-5, for those older than six years of age, PTSD includes four clusters of symptoms (APA, 2013):

- *Re-experiencing the event* — Recurrent memories of the event, traumatic nightmares, dissociative reactions, prolonged psychological distress
- *Alterations in arousal* — Aggressive, reckless or self-destructive behavior, sleep disturbances, hypervigilance
- *Avoidance* — Distressing memories, thoughts, or reminders of the event.
- *Negative alterations in cognition and mood* — Persistent negative beliefs, distorted blame, or trauma-related emotions; feelings of alienation and diminished interest in life

The duration of these symptoms (which cause clinically significant distress or impairment in social, occupational or other important areas of functioning) must occur for one month or longer. In addition, the disturbance cannot be attributed to a substance or medical condition.

DSM-5 has established two subtypes of PTSD:

1. **PTSD Preschool subtype** is used in the diagnosis of children younger than 6 years of age. The diagnostic thresholds are lowered for children and adolescents.

2. **PTSD Dissociative Subtype** is used when the person has prominent dissociative symptoms. These dissociative symptoms include depersonalization, in which the person feels like an outside observer or detached from oneself; and derealisation, in which the world seems unreal, distant or distorted. All other criteria of PTSD must also be met.

Appendix B: Trauma Diary

Thank you for watching the film clip which may have been difficult for some viewers.

After your quiet reflection could you please record unprompted memories that you experienced during the past two minutes. These memories can include images, sounds, thoughts, or feelings that you originally experienced while watching the film clip and then have re-occurred during the last two minutes. Please note the type of memory (i.e. image, sound, thought, feeling, etc.), the vividness of the memory on a scale of 1 (not very vivid) to 6 (very vivid), the amount of distress the memory caused for you on a scale of 1 (not at all distressing) to 6 (very distressing), and a brief description of the memory.

For Example:

Type (image, sound, thought, feeling, etc.)	Vividness (1 - 6)	Distress (1 – 6)	Description
Image	3	4	Woman's dress is ripped
Image	2	2	Man's hand on woman's face
Feeling	2	1	Fear that someone is watching me
Sound	1	2	Screaming

You may have multiple images that caused different amounts of distress for you. Try and list each one that you can recall noting their vividness and level of distress they caused you. List occurrences even if they did not cause you any distress and note these with a "1" for "not at all distressing". The number of occurrences is important to us even if they were not distressing.

Type (image, sound, thought, feeling, etc.)	Vividness (1 - 6)	Distress (1 – 6)	Description

Table continues on the next page if needed.

Chapter 13: References

Affleck, G., & Tennen, H. (1996). Construing benefits from adversity: adaptational significance and dispositional underpinnings. *Journal of Personality*, *64*(4), 899–922. Retrieved from http://www.ncbi.nlm.nih.gov/pubmed/8956517

Aldwin, C. M., & Levenson, M. . (2004). Posttraumatic Growth: A developmental perspective. *Psychological Inquiry*, *15*(1), 19–22.

Allan, J. G. (1995). *Coping with trauma: A guide to self-understanding*. Washington, DC: American Psychiatric Press.

American Psychiatric Association. (2013). *Diagnostic and statistical manual of mental disorders* (5th ed.). Arlington, VA: American Psychiatric Publishing.

Antonovsky, A. (1979). *Health, stress and coping* (1st Ed). San Francisco: Jossey-Bass Inc.

Antonovsky, A. (1987). *Unraveling the Mystery of Health*. San Francisco: Jossey-Bass Inc.

Antonovsky, A. (1993). The structure and properties of the sense of coherence scale. *Social Science and Medicine*, *36*(6), 725–733. http://doi.org/10.1016/0277-9536(93)90033-Z

Benyakar, M., Kutz, I., Dasberg, H., & Stern, M. J. (1989). The collapse of a structure: A structural approach to trauma. *Journal of Traumatic Stress*, *2*(4), 431–449. http://doi.org/10.1007/BF00974600

Blackwell, S. E., Rius-Ottenheim, N., Schulte-van Maaren, Y. W. M., Carlier, I. V. E., Middelkoop, V. D., Zitman, F. G., … Giltay, E. J. (2013). Optimism and mental imagery: A possible cognitive marker to promote well-being? *Psychiatry Research*, *206*(1), 56–61. http://doi.org/10.1016/j.psychres.2012.09.047

Bonanno, G. a. (2004). Loss, trauma, and human resilience: have we underestimated the human capacity to thrive after extremely aversive events? *The American Psychologist*, *59*(1), 20–8. http://doi.org/10.1037/0003-066X.59.1.20

Brewin, C. R. (2001). A cognitive neuroscience account of posttraumatic stress disorder and its treatment. *Behaviour Research and Therapy*, *39*(4), 373–93. Retrieved from http://www.ncbi.nlm.nih.gov/pubmed/11280338

Brown, T., DiNardo, P., & Barlow, D. (1994). *Anxiety Disorders Interview Schedule for DSM-IV: Adult and Lifetime Version*. Oxford: Oxford University Press.

Bryant, R., Sutherland, K., & Guthrie, R. M. (2007). Impaired specific autobiographical memory as a risk factor for posttraumatic stress after trauma. *Journal of Abnormal Psychology*, *116*(4), 837–41. http://doi.org/10.1037/0021-843X.116.4.837

Calhoun, L. G., Cann, A., Tedeschi, R. G., & McMillan, J. (2000). A correlational test of the relationship between posttraumatic growth, religion, and cognitive processing. *Journal of Traumatic Stress*, *13*(3), 521–7. http://doi.org/10.1023/A:1007745627077

Calhoun, L. G., & Tedeschi, R. G. (2004). AUTHORS' RESPONSE: "The Foundations of Posttraumatic Growth: New Considerations." *Psychological Inquiry*, *15*(1), 93–102. http://doi.org/10.1207/s15327965pli1501_03

Calhoun, L. G., & Tedeschi, R. G. (2013). *Posttraumatic Growth in Clinical Practice*. New York, London: Routledge.

Campbell, J. D., Trapnell, P. D., Heine, S. J., Katz, I. M., Lavallee, L. F., & Lehman, D. R. (1996). Self-concept clarity: Measurement, personality correlates, and cultural boundaries. *Journal of Personality and Social Psychology*, *70*(1), 141–156. http://doi.org/10.1037//0022-3514.70.1.141

Carr, A. (2004). *Positive Psychology: The Science of Happiness and Human Strengths*. Sussex: Routledge.

Carver, C. S., Scheier, M. F., & Segerstrom, S. C. (2010). Optimism. *Clinical Psychology Review*, *30*, 879–889. http://doi.org/10.1016/j.cpr.2010.01.006

Carver, C. S., Scheier, M. F., & Weintraub, J. K. (1989). Assessing coping strategies: a theoretically based approach. *Journal of Personality and Social Psychology*, *56*(2), 267–83. Retrieved from http://www.ncbi.nlm.nih.gov/pubmed/2926629

Clark, L., & Watson, D. (1988). Mood and the mundane: relations between daily life events and self-reported mood. *Journal of Personality and Social Psychology*, *54*(2), 296–308. Retrieved from http://www.ncbi.nlm.nih.gov/pubmed/3346815

COMMENTARIES on "Posttraumatic Growth: Conceptual Foundations and Empirical Evidence." (2004). *Psychological Inquiry*, *15*(1), 19–92. http://doi.org/10.1207/s15327965pli1501_02

Conway, M., & Pleydell-Pearce, C. (2000). The construction of autobiographical memories in the self-memory system. *... Review; Psychological Review*, *107*(2), 261–288. http://doi.org/10.1037//0033-295X.

Creemers, D. H. M., Scholte, R. H. J., Engels, R. C. M. E., Prinstein, M. J., & Wiers, R. W. (2012). Implicit and explicit self-esteem as concurrent predictors of suicidal ideation, depressive symptoms, and loneliness. *Journal of Behavior Therapy and Experimental Psychiatry*, *43*(1), 638–46. http://doi.org/10.1016/j.jbtep.2011.09.006

Dalgleish, T., Rolfe, J., Golden, A.-M., Dunn, B. D., & Barnard, P. J. (2008). Reduced autobiographical memory specificity and posttraumatic stress: exploring the contributions of impaired executive control and affect regulation. *Journal of Abnormal Psychology*, *117*(1), 236–41. http://doi.org/10.1037/0021-843X.117.1.236

Davis, C. G., Nolen-Hoeksema, S., & Larson, J. (1998). Making sense of loss and benefiting from the experience: two construals of meaning. *Journal of Personality and Social Psychology*, *75*(2), 561–74. Retrieved from http://www.ncbi.nlm.nih.gov/pubmed/9731325

De Raedt, R., Schacht, R., Franck, E., & De Houwer, J. (2006). Self-esteem and depression revisited: implicit positive self-esteem in depressed patients? *Behaviour Research and Therapy*, *44*(7), 1017–28. http://doi.org/10.1016/j.brat.2005.08.003

Diehl, M., & Hay, E. (2011). Self-Concept Differentiation and Self-Concept Clarity across Adulthood: Associations with Age and Psychological Well-Being. *The International Journal of Aging and Human ...*, *73*(2), 1–23. Retrieved from http://baywood.metapress.com/index/084HR51JR12523W7.pdf

Eaton, W., Muntaner, C., Smith, C., Tien, A., & Ybarra, M. (2004). Center for Epidemiologic Studies Depression Scale: Review and revision (CESD and CESD-R). In M. Maruish (Ed.), *The Use of Psychological Testing for Treatment Planning and Outcomes Assessment. 3rd ed.* (3rd ed., pp. 363–377). Mahwah, NJ: Lawrence Erlbaum.

Ehlers, A. (2010). Understanding and Treating Unwanted Trauma Memories in Posttraumatic Stress Disorder. *Zeitschrift Für Psychologie / Journal of Psychology*, *218*(2), 141–145. http://doi.org/10.1027/0044-3409/a000021

Ehlers, A., & Clark, D. M. (2000). A cognitive model of posttraumatic stress disorder. *Behaviour Research and Therapy*, *38*(4), 319–45. Retrieved from http://www.ncbi.nlm.nih.gov/pubmed/10761279

Elwood, L. S., Hahn, K. S., Olatunji, B. O., & Williams, N. L. (2009). Cognitive vulnerabilities to the development of PTSD: a review of four vulnerabilities and the proposal of an integrative vulnerability model. *Clinical Psychology Review*, *29*(1), 87–100. http://doi.org/10.1016/j.cpr.2008.10.002

Foa, E. B., Ehlers, A., Clark, D. M., Tolin, D. F., & Orsillo, S. M. (1999). The Posttraumatic Cognitions Inventory (PTCI): Development and validation. *Psychological Assessment*, *11*(3),

303–314. http://doi.org/10.1037//1040-3590.11.3.303

Foa, E. B., & Kozak, M. J. (1986). Emotional processing of fear: exposure to corrective information. *Psychological Bulletin*, *99*(1), 20–35. Retrieved from http://www.ncbi.nlm.nih.gov/pubmed/2871574

Gallagher, S. (2013). *The Oxford handbook of the self / edited by Shaun Gallagher.* Oxford : Oxford University Press, 2013. Retrieved from http://search.ebscohost.com/login.aspx?direct=true&db=cat02326a&AN=usl.1552673&site=eds-live

Gilbert, P. (2009). Evolved minds and compassion-focused imagery in depression. In L. Stopa (Ed.), *Imagery and the threatened self: Perspectives on mental imagery and the self in cognitive therapy* (1st ed., pp. 206–232). London: Rutledge.

Giller, E. (1999). What is psychological trauma? Retrieved December 17, 2016, from https://www.sidran.org/resources/for-survivors-and-loved-ones/what-is-psychological-trauma/

Glantz, M. D., & Johnson, J. L. (2002). *Resilience and development: positive life adaptations*. (M. D. Glantz & J. L. Johnson, Eds.). New York: Kluwer Academic/Plenum Publishers.

Green, B. L., Saunders, P. A., Power, E., Dass-Brailsford, P., Schelbert, K. B., Giller, E., … Mete, M. (2016). Trauma-Informed Medical Care: Patient Response to a Primary Care Provider Communication Training. *Journal of Loss & Trauma*, *21*(2), 147–159. http://doi.org/10.1080/15325024.2015.1084854

Hackmann, A. (2011). Imagery rescripting in posttraumatic stress disorder. *Cognitive and Behavioral Practice*, *18*(4), 424–432. http://doi.org/10.1016/j.cbpra.2010.06.006

Hart, K. E., Wilson, T. L., & Hittner, J. B. (2006). A psychosocial resilience model to account for medical well-being in relation to sense of coherence. *Journal of Health Psychology*, *11*(6), 857–62. http://doi.org/10.1177/1359105306069082

Harvey, J. ., Barnett, K., & Overstreet, A. (2004). Trauma growth and other outcomes attendant to loss. *Psychological Inquiry*, *15*(1), 26–29.

Hefferon, K., & Boniwell, I. (2011). *Positive Psychology: Theory, Research and Applications*. New York: Open University Press.

Hefferon, K., Grealy, M., & Mutrie, N. (2009). Post-traumatic growth and life threatening physical illness: a systematic review of the qualitative literature. *British Journal of Health Psychology*, *14*(Pt 2), 343–78. http://doi.org/10.1348/135910708X332936

Hirsch, C. ., Mathews, A., Clark, D. M., Williams, R., & Morrison, J. (2003). Negative self-imagery blocks inferences. *Behaviour Research and Therapy*, *41*(12), 1383–1396. http://doi.org/10.1016/S0005-7967(03)00057-3

Hirsch, C. R., Clark, D. M., Mathews, A., & Williams, R. (2003). Self-images play a causal role in social phobia. *Behaviour Research and Therapy*, *41*, 909–921. http://doi.org/10.1016/S0005-7967(02)00103-1

Hirsch, C. R., Mathews, A., Clark, D. M., Williams, R., & Morrison, J. a. (2006). The causal role of negative imagery in social anxiety: A test in confident public speakers. *Journal of Behavior Therapy and Experimental Psychiatry*, *37*, 159–170. http://doi.org/10.1016/j.jbtep.2005.03.003

Holmes, E. a., Mathews, A., Dalgleish, T., & Mackintosh, B. (2006). Positive Interpretation Training: Effects of Mental Imagery Versus Verbal Training on Positive Mood. *Behavior Therapy*, *37*, 237–247. http://doi.org/10.1016/j.beth.2006.02.002

Holmes, E. a, Brewin, C. R., & Hennessy, R. G. (2004, March). Trauma films, information processing, and intrusive memory development. *Journal of Experimental Psychology.*

General. http://doi.org/10.1037/0096-3445.133.1.3

Hulme, N., Hirsch, C., & Stopa, L. (2012). Images of the self and self-esteem: do positive self-images improve self-esteem in social anxiety?, (February 2015), 37–41. http://doi.org/10.1080/16506073.2012.664557

James, W. (1890). *The principles of psychology*. New York: Holt.

Janoff-Bulman, R. (2004). Posttraumatic growth: Three explanatory models. *Psychological Inquiry*, *15*(1), 30–34.

Johnson, J., Gooding, P. A., Wood, A. M., & Tarrier, N. (2010). Resilience as positive coping appraisals: Testing the schematic appraisals model of suicide (SAMS). *Behaviour Research and Therapy*, *48*(3), 179–86. http://doi.org/10.1016/j.brat.2009.10.007

Johnson, J., Gooding, P., & Tarrier, N. (2008). Suicide risk in schizophrenia: explanatory models and clinical implications, The Schematic Appraisal Model of Suicide (SAMS). *Psychology and Psychotherapy*, *81*, 55–77. http://doi.org/10.1348/147608307X244996

Joseph, S. (2011). *What doesn't kill us: The new psychology of Posttraumatic Growth*. New York: Basic Books.

Kernis, M. H., & Johnson, E. K. (1990). Current and typical self-appraisals: Differential responsiveness to evaluative feedback and implications for emotions. *Journal of Research in Personality*, *24*(2), 241–257.

Kernis, M. H., & Paradise, A. W. (2002). Distinguishing between secure and fragile forms of high self-esteem. In E. Deci & R. Ryan (Eds.), *Handbook of self-determination research* (pp. 339–360). Rochester, NY: University of Rochester Press.

King, L. a, King, D. W., Fairbank, J. a, Keane, T. M., & Adams, G. a. (1998). Resilience-recovery factors in post-traumatic stress disorder among female and male Vietnam veterans: hardiness, postwar social support, and additional stressful life events. *Journal of Personality and Social Psychology*, *74*(2), 420–34. Retrieved from http://www.ncbi.nlm.nih.gov/pubmed/9491585

Kleim, B., Thörn, H. a., & Ehlert, U. (2014). Positive interpretation bias predicts well-being in medical interns. *Frontiers in Psychology*, *5*(June), 1–6. http://doi.org/10.3389/fpsyg.2014.00640

Kobasa, S. (1979). Stressful life events, personality, and health: an inquiry into hardiness. *Journal of Personality and Social Psychology*, (January). Retrieved from http://dtserv2.compsy.uni-jena.de/ss2007/sozpsy_uj/34934890/content.nsf/Pages/DC50ED70E03F18A2C12572F40035EA94/$FILE/Dawes_McTavish_Shaklee_1977.pdf

Kobau, R., Seligman, M., Peterson, C., Diener, E., Zack, M. M., Chapman, D., & Thompson, W. (2011). Mental health promotion in public health: perspectives and strategies from positive psychology. *American Journal of Public Health*, *101*(8), e1-9. http://doi.org/10.2105/AJPH.2010.300083

Lakey, C. E., Hirsch, J. K., Nelson, L. a, & Nsamenang, S. a. (2014). Effects of contingent self-esteem on depressive symptoms and suicidal behavior. *Death Studies*, *38*(February 2015), 563–70. http://doi.org/10.1080/07481187.2013.809035

Leary, M. R., & Tangney, J. P. (2012). *Handbook of self and identity / edited by Mark R. Leary and June Price Tangney*. New York ; London : Guilford, 2012. Retrieved from http://search.ebscohost.com/login.aspx?direct=true&db=cat02326a&AN=usl.1477625&site=eds-live

Leigh, E., & Hirsch, C. R. (2011). Worry in imagery and verbal form: Effect on residual working memory capacity. *Behaviour Research and Therapy*, *49*(2), 99–105. http://doi.org/10.1016/j.brat.2010.11.005

Linley, P. A., & Joseph, S. (2004). Positive change following trauma and adversity: a review. *Journal of Traumatic Stress*, *17*(1), 11–21. http://doi.org/10.1023/B:JOTS.0000014671.27856.7e

Linley, P. A., & Joseph, S. (2011). Meaning in Life and Posttraumatic Growth. *Journal of Loss and Trauma*, *16*(2), 150–159. http://doi.org/10.1080/15325024.2010.519287

Maercker, A., & Zoellner, T. (2004). The Janus Face of self-perceived growth: Toward a two-component model of posttraumatic growth. *Psychological Inquiry*, *15*(1), 41–48.

Maestas, K. L., Benge, J. F., Pastorek, N. J., Lemaire, A., & Darrow, R. (2011). Factor structure of posttraumatic stress disorder symptoms in OEF/OIF veterans presenting to a polytrauma clinic. *Rehabilitation Psychology*. http://doi.org/10.1037/a0025447

Makkar, S. R., & Grisham, J. R. (2011). Social anxiety and the effects of negative self-imagery on emotion, cognition, and post-event processing. *Behaviour Research and Therapy*, *49*(10), 654–64. http://doi.org/10.1016/j.brat.2011.07.004

McMillen, J. (2004). Posttraumatic Growth: What's it all about? *Psychological Inquiry*, *15*(1), 48–52.

Mor, N., Hertel, P., Ngo, T. A., Shachar, T., & Redak, S. (2014). Interpretation bias characterizes trait rumination. *Journal of Behavior Therapy and Experimental Psychiatry*, *45*(1), 67–73. http://doi.org/10.1016/j.jbtep.2013.08.002

Neimeyer, R. A. (2004). Fostering Posttraumatic Growth: A narrative elaboration. *Psychological Inquiry*, *15*(1), 53–59.

Nezlek, J. B., & Plesko, R. M. (2001). Day-to-Day Relationships among Self-Concept Clarity, Self-Esteem, Daily Events, and Mood. *Personality and Social Psychology Bulletin*, *27*(2), 201–211. http://doi.org/10.1177/0146167201272006

Nolen-Hoeksema, S., & Davis, C. G. (2004). Theoretical and Methodological Issues in the Assessment and Interpretation of Posttraumatic Growth. *Psychological Inquiry*, *15*(1), 60–64.

Nolen-Hoeksema, S., Stice, E., Wade, E., & Bohon, C. (2007). Reciprocal relations between rumination and bulimic, substance abuse, and depressive symptoms in female adolescents. *Journal of Abnormal Psychology*, *116*(1), 198–207. http://doi.org/10.1037/0021-843X.116.1.198

Padesky, C. a, & Mooney, K. a. (2012). Strengths-based cognitive-behavioural therapy: a four-step model to build resilience. *Clinical Psychology & Psychotherapy*, *19*(4), 283–90. http://doi.org/10.1002/cpp.1795

Pals, J. L., & McAdams, D. P. (2004). The Transformed Self: A Narrative Understanding of Posttraumatic Growth. *Psychological Inquiry*, *15*(1), 65–69.

Park, C. (1998). Stress-Related Growth and Thriving Through Coping: The Roles of Personality and Cognitive Processes. *Journal of Social Issues*. Retrieved from http://onlinelibrary.wiley.com/doi/10.1111/j.1540-4560.1998.tb01218.x/full

Park, C. L., Cohen, L. H., & Murch, R. L. (1996). Assessment and prediction of stress-related growth. *Journal of Personality*, *64*(1), 71–105. Retrieved from http://www.ncbi.nlm.nih.gov/pubmed/8656319

Pearlman, L. A., & Saakvitne, K. (1995). *Trauma and the therapist*. New York: Norton.

Pearson, D. G., Deeprose, C., Wallace-Hadrill, S. M. a, Heyes, S. B., & Holmes, E. a. (2013). Assessing mental imagery in clinical psychology: A review of imagery measures and a guiding framework. *Clinical Psychology Review*, *33*(1), 1–23. http://doi.org/10.1016/j.cpr.2012.09.001

Piaget, J. (1952). *The origins of intelligence in children*. New York: International Universities Press.

Prestwich, A., Perugini, M., Hurling, R., & Richetin, J. (2010). Using the self to change implicit attitudes, *71*(December 2008), 61–71. http://doi.org/10.1002/ejsp

Pyszczynski, T., Greenberg, J., Solomon, S., Arndt, J., & Schimel, J. (2004). Why Do People Need Self-Esteem ? A Theoretical and Empirical Review, *130*(3), 435–468. http://doi.org/10.1037/0033-2909.130.3.435

Rosenberg, M. (1979). *Conceiving the Self*. New York: Basic Books.

Ryan, R., & Deci, E. (2000). Self-determination theory and the facilitation of intrinsic motivation, social development, and well-being. *The American Psychologist*, *55*(1), 68–78. http://doi.org/10.1037/0003-066X.55.1.68

Ryff, C. D. (1989). Happiness is everything, or is it? Explorations on the meaning of psychological well-being. *Journal of Personality and Social Psychology*, *57*(6), 1069–1081. http://doi.org/10.1037/0022-3514.57.6.1069

Seligman, M. (2002). *Authentic Happiness: Using the new Positive Psychology to realize your potential for lasting fulfillment*. New York: Free Press.

Seligman, M., & Csikszentmihalyi, M. (2000). Positive psychology: An introduction. *American Psychologist*, *55*(1), 5–14. http://doi.org/10.1037//0003-066X.55.1.5

Seligman, M., Rashid, T., & Parks, A. C. (2006). Positive Psychotherapy. *American Psychologist*, (November), 774–788.

Stopa, L. (2009). *Imagery and the threatened self [electronic resource] : perspectives on mental imagery and the self in cognitive therapy*. (L. Stopa, Ed.). London: Routledge.

Stopa, L., Brown, M. a., & Hirsch, C. R. (2012). The effects of repeated imagery practice on self-concept, anxiety and performance in socially anxious participants, *3*(2), 223–242. http://doi.org/10.5127/jep.021511

Stopa, L., Brown, M. a., Luke, M. a., & Hirsch, C. R. (2010). Constructing a self: The role of self-structure and self-certainty in social anxiety. *Behaviour Research and Therapy*, *48*(10), 955–965. http://doi.org/10.1016/j.brat.2010.05.028

Stopa, L., & Jenkins, A. (2007). Images of the self in social anxiety: effects on the retrieval of autobiographical memories. *Journal of Behavior Therapy and Experimental Psychiatry*, *38*(4), 459–73. http://doi.org/10.1016/j.jbtep.2007.08.006

Taylor, S. E. (1983). Adjustment to threatening events: A theory of cognitive adaptation. *American Psychologist*, *38*(11), 1161–1173. http://doi.org/10.1037/0003-066X.38.11.1161

Tedeschi, R. G., & Calhoun, L. G. (1996). The Posttraumatic Growth Inventory: measuring the positive legacy of trauma. *Journal of Traumatic Stress*, *9*(3), 455–71. Retrieved from http://www.ncbi.nlm.nih.gov/pubmed/8827649

Tedeschi, R. G., & Calhoun, L. G. (2004). TARGET ARTICLE: "Posttraumatic Growth: Conceptual Foundations and Empirical Evidence." *Psychological Inquiry*, *15*(1), 1–18. http://doi.org/10.1207/s15327965pli1501_01

Thompson, E. R. (2007). Development and Validation of an Internationally Reliable Short-Form of the Positive and Negative Affect Schedule (PANAS). *Journal of Cross-Cultural Psychology*, *38*(2), 227–242. http://doi.org/10.1177/0022022106297301

Tomaka, J., Morales-Monks, S., & Shamaley, A. G. (2013). Stress and coping mediate relationships between contingent and global self-esteem and alcohol-related problems among college drinkers. *Stress and Health : Journal of the International Society for the Investigation of Stress*, *29*(3), 205–13. http://doi.org/10.1002/smi.2448

Triplett, K. N., Tedeschi, R. G., Cann, A., Calhoun, L. G., & Reeve, C. L. (2012). Posttraumatic

growth, meaning in life, and life satisfaction in response to trauma. *Psychological Trauma: Theory, Research, Practice, and Policy*, *4*(4), 400–410. http://doi.org/10.1037/a0024204

Van Dam, N. T., & Earleywine, M. (2011). Validation of the Center for Epidemiologic Studies Depression Scale-Revised (CESD-R): Pragmatic depression assessment in the general population. *Psychiatry Research*, *186*(1), 128–132. http://doi.org/10.1016/j.psychres.2010.08.018

Watson, D., Clark, L., & Tellegen, A. (1988). Development and validation of brief measures of positive and negative affect: the PANAS scales. *Journal of Personality and Social Psychology*, *54*(6), 1063–70. Retrieved from http://www.ncbi.nlm.nih.gov/pubmed/3397865

Waysman, M., Schwarzwald, J., & Solomon, Z. (2001). Hardiness: an examination of its relationship with positive and negative long term changes following trauma. *Journal of Traumatic Stress*, *14*(3), 531–48. http://doi.org/10.1023/A:1011112723704

Weidmann, A., Conradi, A., Groger, K., Fehm, L., & Fydrich, T. (2009). Using stressful films to analyze risk factors for PTSD in analogue experimental studies--which film works best? *Anxiety, Stress, and Coping*, *22*(5), 549–69. http://doi.org/10.1080/10615800802541986

Zetsche, U., Ehring, T., & Ehlers, A. (2009). The effects of rumination on mood and intrusive memories after exposure to traumatic material: An experimental study. *Journal of Behavior Therapy and Experimental Psychiatry*, *40*(4), 499–514. http://doi.org/10.1016/j.jbtep.2009.07.001

Zoellner, T., Karl, A., & Maercker, A. (2008). Posttraumatic Growth in Accident Survivors : Openness and Optimism as Predictors of Its Constructive or Illusory Sides, *64*(3), 245–263. http://doi.org/10.1002/jclp

Zoellner, T., & Maercker, A. (2006). Posttraumatic growth in clinical psychology - a critical review and introduction of a two component model. *Clinical Psychology Review*, *26*(5), 626–53. http://doi.org/10.1016/j.cpr.2006.01.008

Chapter 14:   Addendum

Rosenberg's Self-Esteem Scale

Please select the choice that best matches how you generally feel.

Statement	Strongly Agree	Agree	Disagree	Strongly Disagree
1. I feel that I am a person of worth, at least on an equal plane with others.				
2. I feel that I have a number of good qualities.				
3. All in all, I am inclined to feel that I am a failure.				
4. I am able to do things as well as most other people.				
5. I feel I do not have much to be proud of.				
6. I take a positive attitude toward myself.				
7. On the whole, I am satisfied with myself.				
8. I wish I could have more respect for myself.				
9. I certainly feel useless at times.				
10. At times I think I am no good at all.				

Self-Concept Clarity Scale

Please select the choice that best matches how you generally feel.

Statement	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
1. My beliefs about myself often conflict with one another.*					
2. On one day I might have one opinion of myself and on another day I might have a different opinion.*					
3. I spend a lot of time wondering about what kind of person I really am.*					
4. Sometimes I feel that I am not really the person that I appear to be.*					
5. When I think about the kind of person I have been in the past, I'm not sure what I was really like.*					
6. I seldom experience conflict between the different aspects of my personality.					
7. Sometimes I think I know other people better than I know myself. *					
8. My beliefs about myself seem to change very frequently.*					
9. If I were asked to describe my personality, my description might end up being different from one day to another day.*					
10. Even if I wanted to, I don't think I could tell someone what I'm really like.*					

11. In general, I have a clear sense of who I am and what I am.					
12. It is often hard for me to make up my mind about things because I don't really know what I want.*					

Resilience Appraisal Scale

Please select the choice that best matches how you generally feel.

Statement	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
1. If I were to have problems, I have people I could turn to.					
2. My family or friends are very supportive of me.					
3. In difficult situations, I can manage my emotions.					
4. I can put up with my negative emotions.					
5. When faced with a problem I can usually find a solution.					
6. If I were in trouble, I know of others who would be able to help me.					
7. I can generally solve problems that occur.					
8. I can control my emotions.					
9. I can usually find a way of overcoming problems.					
10. I could find family of friends who listen to me if I needed them to.					
11. If faced with a set-back, I could probably find a way round the problem.					
12. I can handle my emotions.					

Center for Epidemiologic Studies Depression Scale: Revised (CESD-R)

Please answer for each statement how many days you felt the following way over the past two weeks.

Statement	Not at all or Less than 1 day	1-2 days	3-4 days	5-7 days	Nearly every day for 2 weeks
1. My appetite was poor.					
2. I could not shake off the blues.					
3. I had trouble keeping my mind on what I was doing.					
4. I felt depressed.					
5. My sleep was restless.					
6. I felt sad.					
7. I could not get going.					
8. Nothing made me happy.					
9. I felt like a bad person.					
10. I lost interest in my usual activities.					
11. I slept much more than usual.					
12. I felt like I was moving too slowly.					
13. I felt fidgety.					
14. I wished I were dead.					
15. I wanted to hurt myself.					
16. I was tired all the time.					
17. I did not like myself.					
18. I lost a lot of weight without trying.					
19. I had a lot of trouble getting to sleep.					
20. I could not focus on the important things.					

Experimental Test Booklets

The Experimental Test Booklet for study 1 and the Experimental Test Booklets (Positive and Negative) for study 2 are in separate attached files.

EFFECTS OF VIOLENCE IN MODERN MEDIA

Department of Psychology

Date:

Authored By: Krislyn McWilliams

UNIVERSITY OF
Southampton

Demographics Section

Please provide the following information and remember that all information is kept strictly confidential. No identifying information will be used in any publication or reproduction of the research results. **Please answer the following questions by providing the requested information or circling the corresponding answer.**

1. **Gender**

   a. Male

   b. Female

2. **Age:**

3. **Ethnicity**

   a. White, British

   b. White, Other

   c. Black

   d. Asian

   e. Mixed

   f. Other

4. **Year at University**

   a. First-year

   b. Second-year

   c. Third-year

   d. Four or more years as undergraduate

   e. Masters/Postgraduate

   f. Other:

Please circle the number corresponding to the amount along the scale which you agree with the statement.

1. Do you have the feeling that you don't really care about what goes on around you?

| 1 | 2 | 3 | 4 | 5 | 6 | 7 |

Very seldom or Never   Very often

2. Has it happened in the past that you were surprised by the behaviour of people whom you thought you knew well?

| 1 | 2 | 3 | 4 | 5 | 6 | 7 |

Never happened   Always happened

3. Has it happened that people whom you counted on disappointed you?

| 1 | 2 | 3 | 4 | 5 | 6 | 7 |

Never happened   Always happened

4. Until now your life has had:

| 1 | 2 | 3 | 4 | 5 | 6 | 7 |

No clear goals or purpose at all   Very clear goals and purpose

5. Do you have the feeling that you're being treated unfairly?

| 1 | 2 | 3 | 4 | 5 | 6 | 7 |

Very often   Very seldom or never

6. Do you have the feeling that you are in an unfamiliar situation and don't know what to do?

| 1 | 2 | 3 | 4 | 5 | 6 | 7 |

Very often   Very seldom or never

7. Doing the things you do every day is:

| 1 | 2 | 3 | 4 | 5 | 6 | 7 |

A source of deep pleasure and satisfaction   A source of pain and boredom

8. Do you have very mixed-up feelings and ideas?

| 1 | 2 | 3 | 4 | 5 | 6 | 7 |

Very often   Very seldom or never

9. Does it happen that you have feelings inside you would rather not feel?

1	2	3	4	5	6	7

Very often   Very seldom or never

10. Many people – even those with a strong character – sometimes feel like sad sacks (losers) in certain situations. How often have you felt this way in the past?

1	2	3	4	5	6	7

Never   Very often

11. When something happened, have you generally found that:

1	2	3	4	5	6	7

You overestimated or underestimated its importance   You saw things in the right proportion

12. How often do you have the feeling that there's little meaning in the things you do in your

daily life?

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Very often   Very seldom or never

13. How often do you have feelings that you're not sure you can keep under control?

1	2	3	4	5	6	7

Very often   Very seldom or never

This scale consists of a number of words that describe different feelings and emotions. **Read each item and then mark to what extent you feel this way right now, that is, at the present moment.**

	Very slightly or	A little	Moderately	Quite a bit	Extremely
Upset					
Hostile					
Alert					
Ashamed					
Inspired					
Nervous					
Determined					
Attentive					
Afraid					
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Listed below are a number of statements concerning personal attitudes and characteristics. Please read each statement carefully and consider the extent to which you think it is like you. Select the number on the scale below that best reflects your answer. There are no right or wrong answers, so please answer as honestly as you can.

Statement	Not at all Like me (1)	2	Neutral (3)	4	Very much Like me (5)
1. An important measure of my worth is how competently I perform.					
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3. A big determinant of how much I like myself is how well I perform up to the standards that I have set for myself.					
4. My overall feelings about myself are heavily influenced by how much other people like and accept me.					
5. If I get along well with somebody, I feel better about myself overall.					
6. An important measure of my worth is how physically attractive I am.					
7. My overall feelings about myself are heavily influenced by what I believe other people are saying or thinking about me.					
8. If I am told that I look good, I feel better about myself in general.					
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For each of the following statements, please indicate the extent to which the statement applies to you **RIGHT NOW**. Use the scale provided.

Statement	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
1. My beliefs about myself often conflict with one another.					
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STOP HERE TO WATCH A FILM CLIP. PLEASE ADVISE THE RESEARCH STAFF THAT YOU HAVE REACHED THIS POINT. THANK YOU!

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Thank you for watching the film clip which may have been difficult for some viewers.

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For Example:

Type (image, sound, thought, feeling, etc.)	Vividness (1 - 6)	Distress (1 – 6)	Description
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Feeling	2	1	Fear that someone is watching me
Sound	1	2	Screaming

You may have multiple images that caused different amounts of distress for you. Try and list each one that you can recall noting their vividness and level of distress they caused you. List occurrences even if they did not cause you any distress and note these with a "1" for "not at all distressing". The number of occurrences is important to us even if they were not distressing.

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Continue if needed.

Type (image, sound, thought, feeling)	Vividness (1 - 6)	Distress (1 – 6)	Description

Please circle your response below the question.

(1) Have you ever seen the film that this clip was taken from, "Irreversible" (2003)?

YES   NO

Place an X in the appropriate box.

(2) How distressing did you find the clip?

Not at All					Very Much
(1)	**(2)**	**(3)**	**(4)**	**(5)**	**(6)**

(3) How involved have you been in what happened in the film clip?

Not at All					Very Much
(1)	**(2)**	**(3)**	**(4)**	**(5)**	**(6)**

(4) How well were you able to concentrate on the film?

Not at All					Very Much
(1)	**(2)**	**(3)**	**(4)**	**(5)**	**(6)**

Listed below are a number of statements concerning personal attitudes and characteristics. Please read each statement carefully and consider the extent to which you think it is like you. Select the number on the scale below that best reflects your answer. There are no right or wrong answers, so please answer as honestly as you can.

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For each of the following statements, please indicate the extent to which the statement applies to you **RIGHT NOW**.

Statement	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
1. My beliefs about myself often conflict with one another.					
2. Sometimes I feel that I am not really the person that I appear to be.					
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4. If I were asked to describe my personality, my description might end up being different from one day to another day.					

D-SCCS

EFFECTS OF VIOLENCE IN MODERN MEDIA

Department of Psychology

Date:

Authored By: Krislyn McWilliams

UNIVERSITY OF
Southampton

Demographics Section

Please provide the following information and remember that all information is kept strictly confidential. No identifying information will be used in any publication or reproduction of the research results. **Please answer the following questions by providing the requested information or circling the corresponding answer.**

1. **Gender**
   a. Male
   b. Female

2. **Age:**

3. **Ethnicity**
   a. White, British
   b. White, Other
   c. Black
   d. Asian
   e. Mixed
   f. Other

4. **Year at University**
   a. First-year
   b. Second-year
   c. Third-year
   d. Four or more years as undergraduate
   e. Masters/Postgraduate
   f. Other:

Please circle the number corresponding to the amount along the scale which you agree with the statement.

1. Do you have the feeling that you don't really care about what goes on around you?

| 1 | 2 | 3 | 4 | 5 | 6 | 7 |

Very seldom or Never   Very often

2. Has it happened in the past that you were surprised by the behaviour of people whom you thought you knew well?

| 1 | 2 | 3 | 4 | 5 | 6 | 7 |

Never happened   Always happened

3. Has it happened that people whom you counted on disappointed you?

| 1 | 2 | 3 | 4 | 5 | 6 | 7 |

Never happened   Always happened

4. Until now your life has had:

| 1 | 2 | 3 | 4 | 5 | 6 | 7 |

No clear goals or purpose at all   Very clear goals and purpose

5. Do you have the feeling that you're being treated unfairly?

| 1 | 2 | 3 | 4 | 5 | 6 | 7 |

Very often   Very seldom or never

6. Do you have the feeling that you are in an unfamiliar situation and don't know what to do?

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Very often   Very seldom or never

7. Doing the things you do every day is:

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A source of deep pleasure and satisfaction   A source of pain and boredom

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I-PANAS

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Using the scale below, please rate the percentage of time that you were able to hold the image in mind during the 2 min of reflection.

0%   10   20   30   40   50   60   70   80   90   100%

Not at all   All the time

Using the scale below, please rate how vivid the image was that you held in mind during the reflection time.

0   1   2   3   4   5   6   7   8   9   10

Not at all vivid   Extremely vivid

Using the scale below, please rate how negative the image made you feel about yourself during the reflection time.

0   1   2   3   4   5   6   7   8   9   10

Not at all
negative

Extremely
negative

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YES   NO

Place an X in the appropriate box.

(2) How distressing did you find the clip?

Not at All					Very Much
(1)	(2)	(3)	(4)	(5)	(6)

(3) How involved have you been in what happened in the film clip?

Not at All					Very Much
(1)	(2)	(3)	(4)	(5)	(6)

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Not at All					Very Much
(1)	(2)	(3)	(4)	(5)	(6)

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3. **Ethnicity**

    a. White, British

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    c. Black

    d. Asian

    e. Mixed

    f. Other

4. **Year at University**

    a. First-year

    b. Second-year

    c. Third-year

    d. Four or more years as undergraduate

    e. Masters/Postgraduate

    f. Other:

Please circle the number corresponding to the amount along the scale which you agree with the statement.

1. Do you have the feeling that you don't really care about what goes on around you?

| 1 | 2 | 3 | 4 | 5 | 6 | 7 |

Very seldom or Never   Very often

2. Has it happened in the past that you were surprised by the behaviour of people whom you thought you knew well?

| 1 | 2 | 3 | 4 | 5 | 6 | 7 |

Never happened   Always happened

3. Has it happened that people whom you counted on disappointed you?

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5. Do you have the feeling that you're being treated unfairly?

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0%   10   20   30   40   50   60   70   80   90   100%

Not at all   All the time

Using the scale below, please rate how vivid the image was that you held in mind during the reflection time.

0   1   2   3   4   5   6   7   8   9   10

Not at all vivid   Extremely vivid

Using the scale below, please rate how positive the image made you feel about yourself during the reflection time.

0   1   2   3   4   5   6   7   8   9   10

Not at all
positive

Extremely
positive

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Please circle your response below the question.

(1) Have you ever seen the film that this clip was taken from, "Irreversible" (2003)?

YES   NO

Place an X in the appropriate box.

(2) How distressing did you find the clip?

Not at All					Very Much
(1)	(2)	(3)	(4)	(5)	(6)

(3) How involved have you been in what happened in the film clip?

Not at All					Very Much
(1)	(2)	(3)	(4)	(5)	(6)

(4) How well were you able to concentrate on the film?

Not at All					Very Much
(1)	(2)	(3)	(4)	(5)	(6)

Listed below are a number of statements concerning personal attitudes and characteristics. Please read each statement carefully and consider the extent to which you think it is like you. Select the number on the scale below that best reflects your answer. There are no right or wrong answers, so please answer as honestly as you can.

Statement	Not at all Like me (1)	2	Neutral (3)	4	Very much Like me (5)
1. An important measure of my worth is how competently I perform.					
2. Even in the face of failure, my feelings of self-worth remain unaffected.					
3. A big determinant of how much I like myself is how well I perform up to the standards that I have set for myself.					
4. My overall feelings about myself are heavily influenced by how much other people like and accept me.					
5. If I get along well with somebody, I feel better about myself overall.					
6. An important measure of my worth is how physically attractive I am.					
7. My overall feelings about myself are heavily influenced by what I believe other people are saying or thinking about me.					
8. If I am told that I look good, I feel better about myself in general.					
9. My feelings of self-worth are basically unaffected when other people treat me badly.					
10. An important measure of my worth is how well I perform up to the standards that other people have set for me.					
11. If I know that someone likes me, I do not let it affect how I feel about myself.					
12. When my actions do not live up to my expectations, it makes me feel dissatisfied with myself.					
13. Even on a day when I do not look my best, my feelings of self-worth remain unaffected.					
14. My overall feelings about myself are heavily influenced by how good I look.					
15. Even in the face of rejection, my feelings of self-worth remain unaffected.					

This scale consists of a number of words that describe different feelings and emotions. **Read each item and then mark to what extent you feel this way right now, that is, at the present moment.**

	Very slightly or Not at all	A little	Moderately	Quite a bit	Extremely
Upset					
Hostile					
Alert					
Ashamed					
Inspired					
Nervous					
Determined					
Attentive					
Afraid					
Active					

For each of the following statements, please indicate the extent to which the statement applies to you **RIGHT NOW**.

Statement	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
1. My beliefs about myself often conflict with one another.					
2. Sometimes I feel that I am not really the person that I appear to be.					
3. My beliefs about myself seem to change very frequently.					
4. If I were asked to describe my personality, my description might end up being different from one day to another day.					

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