Wilfrid Laurier University

Scholars Commons @ Laurier

2010

Two Sides to Every Trauma: The Role of Posttraumatic Growth and Decline in Well-Being

Danay C. Novoa
Wilfrid Laurier University

Canada

Two Sides to Every Trauma:

The Role of Posttraumatic Growth and Decline in Well-Being

by

Danay C. Novoa

B. A. Brock University

Master's Thesis

Submitted to the Department of Psychology/Faculty of Science

in partial fulfillment of the requirements

Master of Arts, Psychology

Wilfrid Laurier University

2010

Abstract

Research clearly demonstrates how traumatic events can damage psychological and physical health (Janoff-Bulman, 1992). However, Tedeschi and Calhoun (2004) argue that posttraumatic growth can also occur following adversity. Although largely well-received, their theory and the posttraumatic growth inventory (PTGI) have been critiqued as well. For instance, Wortman (2004) argues that Tedeschi and Calhoun give insufficient consideration to the negative consequences of traumatic events. Concurring with Wortman, we contend that the PTGI, constructed to measure only growth, does not allow participants the opportunity to report decline in any domain. This scale design may artificially inflate the apparent occurrence of posttraumatic growth while neglecting the challenges that may co-occur. In the current research, we adapted the PTGI to more fully capture respondents' experiences of both growth and decline. In three studies, participants recalled a significant negative event and completed our adapted version of the PTGI (the posttraumatic growth and decline inventory or PTGDI). In Study 2, participants were randomly assigned to complete the original PTGI or our revised PTGDI. In all studies, participants reported experiencing both growth and decline. Furthermore, up to 16% of participants completing the PTGDI reported more decline than growth, whereas participants in the PTGI condition were unable to report any decline. Moreover, measuring both growth and decline allowed us to better predict a variety of well-being indicators than measuring growth alone. Additionally, in Study 3, participants were randomly assigned to describe an event that happened to the self or another. In general, similar patterns of the relation of growth and decline to well-being were found for the self condition. Results demonstrate the importance of investigating both positive and negative consequences of adverse life events to better understand current experience.

Acknowledgments

Table of Contents

List of Tables

List of Figures

Literature Review

"In seeking truth you have to get both sides of a story" Walter Cronkite (1999).

Past research has demonstrated the negative effects of traumatic events. Alternatively there is evidence that positive consequences may also be experienced as a result of traumatic events. Much of the past literature has focused on either one or the other type of consequence, however despite concerns about the limitations of a narrow focus, only a small literature focuses on both outcomes together. Yet there is still uncertainty as to whether there is value to assessing both. The goal of the present research is to demonstrate value in assessing 'both sides of the story' (positive and negative consequences) and the role both sides play in well-being.

Trauma

People inevitably face challenges in their lives; and some are confronted with severe and very negative traumatic events. The DSM-IV-TR describes a traumatic event as one where a person experiences threat or harm to the self, or witnesses this happening to someone else, resulting in a response of fear, helplessness, or horror (American Psychiatric Association, 2000). Traumatic events have been classified into three types: natural and technological disasters, war and related problems, and individual trauma. Individual traumatic events are potentially life-threatening events that happen to a single person or to a few people (Aldwin, 2007). Although individual trauma has been the primary focus of the trauma literature, as trauma is in itself extraordinary, other less severe events have also been investigated in many of the same ways as trauma (e.g. Park, Cohen, & Murch, 1996; Park & Fenster, 2004).

Researchers (e.g. Janoff-Bulman, 1992) have argued that people generally view

the world as benevolent and meaningful and regard themselves as moral individuals.

When an individual experiences a traumatic event, those assumptions are shattered and

they are forced to pick up the pieces and start the rebuilding process (Janoff-Bullman,

1989; 1992; Tedeschi, Park, & Calhoun, 1998). Past research has repeatedly

demonstrated the negative effects of traumatic experiences which can be life-shattering

events that have lasting detrimental effects on health and well-being (Janoff-Bulman,

1992; Wortman & Boerner, 2007). Research has also shown that people often exhibit

severe depression, experience relationship problems (Lehman, Wortman, & Williams,

1987), and suffer Posttraumatic Stress Disorder (PTSD) following a traumatic event

(Wortman, 2004). Although trauma can be life-shattering, there is evidence that less

traumatic events can also have adverse effects on a person's well-being (e.g. Park et al.,

1996; Park & Fenster, 2004).

Posttraumatic Growth

Although research has demonstrated the detrimental effects of traumatic

experiences, there is an alternative view which argues that not all traumatic events result

in only negative consequences. Several theorists have argued that people can grow from

these experiences (Joseph, Williams, & Yule, 1993; Lehman et al., 1987; Park et al.,

1996; Tedeschi & Calhoun, 1996). For example, Tedeschi and Calhoun (2004) argued

that people can experience growth from traumatic events and developed the theory of

posttraumatic growth. Posttraumatic growth refers to the positive psychological change

that is experienced as a result of the struggle following a traumatic or severe negative

experience (Tedeschi & Calhoun, 2004). Tedeschi and Calhoun (2004) argued that

posttraumatic growth is a process or outcome that results from a significant threat or life

shattering occurrence. They suggested that the actual traumatic experience is not what

promotes growth, but rather the struggle the individual faces as a result of the

experience. The event must be difficult enough that it shatters the person's assumptions

of the world for growth to occur, and the level of struggle determines the amount of

growth that is experienced (Tedeschi & Calhoun, 2004). Individuals who survive

trauma come out of the struggle with more self-awareness and perceive themselves

differently (Janoff-Bulman, 2004).

The degree of cognitive processing of the event (re-examination of world

assumptions) or meaning making (making sense of the event) have been argued to be

important for the facilitation of growth (Calhoun, Cann, Tedeschi, & McMillan, 2000;

Janoff-Bulman, 1992; Tedeschi & Calhoun, 2004; Ullrich & Lutgendorf, 2002),

especially among those who successfully find meaning in the event (Bower, Kemeny,

Taylor, & Fahey, 1998; Davis, Wortman, Lehman, & Silver, 2000; Murphy, Johnson, &

Lohan, 2003). However, those who do not report searching for meaning sometimes

report doing better than those who do search and are not successful in finding meaning

(Davis et al., 2000).

Tedeschi and Calhoun (1996) found that those who experienced a traumatic

event reported more growth than those who did not experience trauma. Moreover, not

only have people reported growth from traumatic events, but growth has also been

found to be associated with positive outcomes. For instance, previous research has

found that reported benefit or growth from adverse events has been associated with

lower levels of depression, higher well-being (e.g. Helgeson, Reynolds, & Tomich,

2006; Mols, Vingerhoets, Coebergh, & van de Polls-Franse, 2009) and greater subjective physical health (e.g. Sawyer, Ayers, & Field, 2010). However, growth has also been found to be unrelated to well-being (e.g. Proffitt, Cann, Calhoun, & Tedeschi, 2007; Tallman, Shaw, Schultz, & Altmaier, 2010). As it is not entirely clear that growth is always associated with well-being, we argue that is it important to continue the research on this relation as it will provide a greater understanding of the link between growth and positive outcome.

As mentioned earlier, in addition to Tedeschi and Calhoun, other researchers (e.g. Park et al., 1996; Park & Fenster, 2004) have investigated positive consequences of negative events and have found that people can report finding benefit from other types of adversity. For example, Park et al., (1996) examined stress-related growth by asking participants to recall their most stressful or upsetting event in the past year and found that participants reported growth from a variety of events, ranging from academic problems to loss of a loved one. However, Tedeschi and Calhoun (2004) argued that these other terms (e.g. stress-related growth) are not representative of posttraumatic growth. They claimed that the term 'posttraumatic growth' is more specific to traumatic events that shatter people's world assumptions rather than other kinds of stressful events (e.g. stress-related growth). Although Tedeschi and Calhoun argue that growth is specific to trauma, other researchers, such as Park et al. (1996), have found reports of growth with less traumatic events. It seems that although growth tends to result from traumatic events, there is evidence that growth may not only be specific to these events.

Furthermore, Tedeschi and Calhoun (2004) have distinguished previously investigated constructs such as resilience from that of posttraumatic growth. Resilience

assesses people's ability to bounce back from adversity, whereas posttraumatic growth measures the improvement people experience as a result of their trauma. Tedeschi and Calhoun asserted that posttraumatic growth is change that is beyond a return to baseline. They argued that when people experience posttraumatic growth they do not just return to who they were prior to the event; they instead experience meaningful improvement (Tedeschi & Calhoun, 2004; Tedeschi et al., 1998).

Although Tedeschi and Calhoun argued that people report meaningful improvement from traumatic experiences, it is difficult to know if the reported growth is *actual* or *perceived*. They suggested that the reported growth *appears* to be real transformations rather than illusions of growth. Tedeschi, Calhoun and Cann (2007) argued that posttraumatic growth is not just illusory as it has been found to be unrelated to social desirability (see Park et al., 1996; Tedeschi & Calhoun, 1996). Although the growth experienced *feels* real, previous research has found that the growth reported may be illusory. For instance, McFarland and Alvaro (2000) asked participants to report improvements for their self or for an acquaintance. Participants reported more growth for themselves than they did for acquaintances. Furthermore, participants who reported improvement did so by derogating past self pre-trauma to promote the illusion of growth, even though no improvement of the current self was evidenced.

Nonetheless, even if growth is illusory this does not mean that it is irrelevant. People are still *feeling* they have grown after a difficult experience and this in turn can conceivably affect how they perceive other aspects of their lives. Calhoun and Tedeschi (2004) stated that instead of arguing about whether or not growth is real or perceived, what is more important are the benefits of having such experiences as may they have

consequences on psychological functioning. Previous research has found that reported

benefits from negative events were associated with higher well-being and lower

depression (Helgeson et al., 2006; Mols et al., 2009) and greater subjective physical

health (e.g. Sawyer, Ayers, & Field, 2010). We argue that although it is not clear

whether or not growth is authentic, there is still merit in researching the potential

benefits of perceived growth.

Posttraumatic Growth Inventory

To assess the amount of growth people reported as a result of traumatic events,

Tedeschi and Calhoun (1996) developed the posttraumatic growth inventory (PTGI).

The items were based on reactions to highly stressful events seen in the literature, as

well as interviews of those who had experienced loss and/or other crises. The PTGI

consists of 21 self-reported items that measure growth in five domains: relating to

others, new possibilities, personal strength, spiritual change, and appreciation of life.

When completing the PTGI, participants report the level of growth they experienced on

a scale ranging from "no change" to "a very great degree of change." Some example

items include: "I learned a great deal about how wonderful people are" (relating to

others) and "I discovered that I'm stronger than I thought I was" (personal strength).

The domain of *relating to others* captures the amount of growth people report

concerning items such as compassion for others and closeness with others. The domain

new possibilities highlights the growth people report concerning their willingness to

change aspects in their life that require change (Tedeschi & Calhoun 1996; 2004). The

personal strength domain captures feelings of growth related to self-reliance and

strength as a result of the traumatic event (Tedeschi & Calhoun, 2004). Growth in the

spiritual change domain reflects a change in understanding of spiritual matters or religious faith. Lastly, the domain of *appreciation of life* captures the growth an individual may experience regarding their appreciation for each day or intentions of living life to the fullest.

Criticism of the Posttraumatic Growth Inventory

Although the theory of posttraumatic growth has been well received, some researchers (e.g. Wortman, 2004) have argued that by focusing so heavily on positive changes following trauma, Tedeschi and Calhoun (2004) are missing the bigger picture. In addition to Wortman, we also contend that in assessing growth alone there is a loss of potentially valuable information. When assessing only one type of consequence (positive in the case of the PTGI) two problems can arise: 1) limiting the focus to only one side of the story, thus neglecting the other side and 2) the risk of misrepresentation or inflation of that consequence. In other words, Tedeschi and Calhoun (1996; 2004) are limiting the types of responses participants can provide by only assessing the growth people report experiencing with the PTGI. Wortman (2004) stressed the importance of examining both negative and positive changes that occur after traumatic experiences. She argued that although positive changes do occur, there are a number of negative changes that also occur following such experiences. Aldwin and Levenson (2004) and Park (2004) agreed that it would be beneficial to assess both positive *and* negative consequences of traumatic events as there is evidence that people report experiencing both (e.g., Aldwin, Sutton, & Lachman, 1996). In only assessing growth, Tedeschi and Calhoun will only get reports of growth however this will not give indication of other reactions to the event, in turn biasing results.

Furthermore, as stated earlier, Tedeschi and Calhoun (1996) run the risk of reports of growth being misrepresented or inflated. Because the focus is solely on growth, is it possible that when interpreting the data, people report more growth than they actually experienced. One possible reason why this might occur is that because participants are not given a comparable opportunity to report negative consequences, results would seem as though the participants are reporting their life overall since the negative event has been positive. Another reason why the growth reported might be misrepresented or inflated is in reference to the actual items on the PTGI. We argue that there are some items that are ambiguously worded such that it is not clear that these items reflect growth, thus when participants report experiencing a change on these items they may not be reporting growth at all. For example, the item "I changed my priorities about what is important in life" is not clearly reflective of growth. Therefore when a participant reports that they have experienced change on this item, they are only indicating that their priorities have changed, not necessarily that the change has been a positive one (and could even be in a negative direction). Trauma survivors who complete the PTGI can only report that they have experienced "no change" to "a very great degree of change" – and all reports of *change* are taken to be indications of *improvement*. This seems problematic given that it is evident in the literature (Lehman et al., 1987; Janoff-Bulman, 1992; Wortman, 2004; Wortman & Boerner, 2007) that negative consequences occur from traumatic events.

Positive and Negative Consequences of Trauma

Consistent with the view of the importance of measuring both positive and negative consequences, other researchers (e.g. Armeli, Gunthert, & Cohen, 2001;

Frazier, Conlon, & Glaser, 2001; Joseph et al., 1993) have examined both consequences through various methods. One method that previous research has used is assessing both positive and negative consequences on a continuum. For instance, Frazier et al. (2001) investigated longitudinally the positive and negative changes women reported after being sexually assaulted (assessed at 2 weeks, 2 months, 6 months, and 1 year post assault). Participants reported the changes they experienced as a result of the event on a continuum where they indicated if the changes they experienced in various domains (e.g. changes in the self) were "much worse now" to "much better now". They found that initially participants reported more negative changes from the event, however later they reported more positive changes (Frazier et al., 2001).

Furthermore, Armeli et al. (2001) revised Park et al.'s (1996) stress-related growth scale, which originally assessed positive consequences only, to allow participants to report both types of consequences after a highly stressful event (in the last two years). Participants reported the amount of growth they experienced on items such as "My satisfaction with life" on a scale of 1 (greatly decreased) to 7 (greatly increased). The original Park scale ranged from 0 (not at all) to 2 (a great deal) where participants indicated how much personal growth they experienced from their event. Armeli et al. (2001) argued that only having response options in the positive direction results in a loss of information of the negative consequences that may be experienced.

However because Armeli et al. (2001) and Frazier et al., (2001) asked participants to report their growth on a continuum from greatly decreased to greatly increased, they were unable to report *both* growth and decline on the same item. For example, it is possible that an individual feels that their satisfaction with life in various

domains has both increased *and* decreased. On a continuum, the individual might average her responses; if her positive outcome is somewhat stronger (+3) than her negative outcome (-2), she might report on average a mild positive outcome (+1). Hence this approach cannot tell us whether people experience both growth and decline in the same domains, or whether they experience only growth *or* decline.

Other studies (e.g. Baker, Kelly, Calhoun, Cann, & Tedeschi, 2008; Gottlieb, Still, & Newby-Clark, 2007; Joseph et al., 1993; Joseph, Lindley, Shelvin, Goodfellow, & Butler, 2006; Lehman et al., 1993) have taken the approach of assessing positive and negative consequences separately. For instance, Joseph et al. (1993) created a measure called the Changes in Outlook Questionnaire (CiOQ), which assessed positive and negative responses to a disaster separately. Example items from the questionnaire included statements such as "I don't take life for granted anymore" for positive and "I have very little trust in other people now" for negative (Joseph et al., 1993). Joseph et al. (1993) found that participants reported experiencing both positive and negative changes and that the changes were unrelated, suggesting that they are independent. Joseph et al. argued that there is value in assessing both consequences separately as they seem to be separate constructs. Researchers (e.g., Linley & Joseph, 2004; Park, 2004) have further argued that assessing both positive and negative consequences adds to our understanding of negative events. Previous research has found that assessing positive *and* negative consequences whether through a continuum or as separate dimensions captures a fuller range of responses (e.g., Armeli et al., 2001) and predicts different outcomes (e.g., Joseph et al., 1993).

Although Tedeschi and Calhoun have been criticized for not taking into account negative consequences following trauma, it should be noted that they do acknowledge the role of struggle and distress following trauma. Indeed, one of their arguments has been that the very pain and distress that people experience after a trauma can be integral in spurring the process of growth. From this perspective, Tedeschi and Calhoun might argue that they do acknowledge negative consequences but that they caution against focusing too much on the negative. Indeed, they have argued that clinicians have placed too much emphasis on the negative consequences of trauma with the intention of reducing these consequences. They suggested that this focus on reduction of distress may have unconsciously dismissed the growth and rebuilding that occurs as a result of distress. Despite this acknowledgement, until very recently they did not address both aspects empirically.

Posttraumatic Growth and Decline/Depreciation

The small literature that has examined both positive and negative consequences has done so mainly through the creation of new items/scales: however, there are relatively few studies which have taken established scales, such as the PTGI, and adapted them to measure both consequences. To our knowledge, there are only two studies published to date that have adapted the PTGI to examine both positive and negative consequences, Tedeschi and Calhoun's own attempt to address decline (Baker et al., 2008) and Gottlieb et al. (2007).

Independent from Tedeschi and Calhoun (and unbeknownst to us when the research was initiated), Gottlieb et al. (2007) examined both growth and decline (creating parallel decline items from the PTGI) in emerging adults. They asked

participants to report (by checking off growth and decline items) whether they had experienced growth and decline then indicate if the catalyst was event specific or otherwise. When participants reported that their growth and/or decline resulted from events, they also indicated the valence of the event. Gottlieb et al. found that participants reported both growth and decline and were more likely to report these consequences as a result of events. Growth was reported for more positively valenced events and decline was reported for more negatively valenced events. Their goal, however, was not to address the criticism in the literature of the PTGI but to demonstrate that emerging adults experience both consequences regardless of whether they were provoked by a specific event or general experience.

On the other hand, Tedeschi, Calhoun and colleagues (Baker et al., 2008) aimed to address the criticisms of the PTGI. Baker et al. (2008) conducted two studies that investigated whether people reported both posttraumatic growth and posttraumatic depreciation (what we term in the present study as posttraumatic decline) as a result of a stressful event. In their first study, Baker et al. (2008) measured both constructs as two separate scales, where participants completed the PTGI and the posttraumatic depreciation scale (counterbalanced) separately whereas in the second study both constructs were assessed within the same measure (presented in growth/depreciation pairs, pairs counterbalanced).[1] They created depreciation items by mirroring the original PTGI items in the decline direction to allow participants to report negative changes as well as positive ones. Growth items were mirrored by using antonyms when applicable

---

[1] The order was only significant in the first study ($p < .05$). Growth was higher when presented first than when presented second and the effect was the same for depreciation. No order effects were found in Study 2.

or by creating new items conveying depreciation that were parallel to the growth items in the PTGI.

In both studies, participants first described a highly stressful event from the last three years, indicated the estimated date of the event and rated the stressfulness of the event on a 7 point scale (1 = not stressful to 7 = extremely stressful). Baker et al. (2008) found that an average of 27% (in both studies) of participants reported some degree of change for both posttraumatic growth and depreciation. Furthermore, participants reported higher growth than depreciation, and these constructs were unrelated, suggesting that growth and depreciation are orthogonal constructs where people may experience both types of consequences.

Baker et al.'s (2008) finding that many people report some degree of both growth and depreciation, and the fact that the two measures were orthogonal, suggest that measuring responses on a continuum could result in the loss of some information, since people cannot easily report that they experience both growth and depreciation. Baker and colleagues argued that because growth was found to be much higher than depreciation in both studies, growth must be an important aspect of posttraumatic experiences. In contrast, they suggest that the question remains whether the assessment of depreciation adds significantly to our understanding of stressful events. Baker et al. questioned whether the 'cost' of having participants report on additional items (additional time, etc.) is worth it, given that mean depreciation scores were low. However, Baker et al.'s two studies only assessed levels of growth and depreciation, and did not examine the outcome variables that might be predicted by these measures (e.g., well being or distress). Indeed, they acknowledged that further examination of

both growth and depreciation is necessary, especially regarding their relation to outcome variables. Baker et al. further stressed that results are preliminary and the implications for clinical work needs to be taken with caution.

The purpose of the present study was to address this criticism of the PTGI in the literature. After our research was underway, we discovered that Tedeschi and Calhoun were also responding to the criticism in the literature by developing a scale similar to the one we developed for these studies. Therefore, the goal of the present study is to further extend the investigation of the *balance* of positive and negative consequences following adversity by examining the relation of these consequences to outcome variables, using Tedeschi and Calhoun's PTGI as a starting point.

Study Overview

In the current study, we plan to extend the literature assessing not only participants' reports of posttraumatic growth and decline but also their relation to outcome variables (e.g. well-being). We conducted three studies with the purpose of examining the levels of and relation between posttraumatic growth and posttraumatic decline (what Baker et al. term posttraumatic depreciation), as well as the role they play in well-being. We expect posttraumatic growth and decline to co-occur (e.g. Baker et al., 2008) and to predict outcomes differently, as found in previous research (e.g. Joseph et al., 1993). In the first study, we created two types of items. Some items measured posttraumatic growth and decline on a continuum (one endpoint indicating greatest growth and the other indicating greatest decline), similar to Armeli et al. (2001) and Frazier et al. (2001). The other items we created by mirroring the original PTGI items in the decline direction to assess the negative consequences that may occur

as a result of negative events. We created these decline items using antonyms when relevant and using parallel phrasing otherwise. Our goal was to capture decline in roughly the same domains as the PTGI. Although we created the decline items independently from Baker et al. (2008), the items were created using a similar procedure.

In the second study, we revised the posttraumatic growth and decline inventory (PTGDI) to mirror all of the PTGI items more systematically, so that growth and decline items were all assessed separately.[2] Finally in the third study, we used an adapted version of Baker et al.'s (2008) depreciation items,[3] however instead of separate scales or parallel pairing, we kept the growth and decline items integrated as in the first two studies.

As previously mentioned, Tedeschi and Calhoun (2004) argued that events need to be life-shattering for growth to occur, however there is evidence that traumatic or severe negative events may not be the only types of events that facilitate growth. Other researchers have found that participants have reported growth from less traumatic negative events (e.g. Park 1996, Park & Fenster, 2004). This suggests that growth may not only be a special outcome of traumatic events, but rather a result of negative events in general. In the present studies, we allowed participants to recall a wide range of negative events from the last few years which had a direct impact on their life.

In the first study, we examined the relation between growth and decline as well as the role of growth and decline in well-being. We suspected that some of the PTGI items, (specifically those ambiguously worded) may be reporting incidence of growth

---

[2] The wording of ambiguous items was adjusted for clarity.
[3] The wording of a depreciation item was adjusted for more clarity.

that is not truly growth. When participants report change on an item that does not

clearly reflect growth (ambiguously worded) their response would be interpreted as

"growth" when it may not be growth at all. Thus, the ambiguously worded items were

adjusted to measure growth and decline on a continuum. We also wanted to examine

whether measuring *both* growth and decline contributed to an increase in our ability to

predict well being (compared to growth alone) and whether the interaction of growth

and decline would account for more variance than the two variables on their own. In

addition to addressing the issues of ambiguity and only assessing one consequence, the

first study will also address the difference between the amount of growth and decline

reported on a continuum vs. separately. This will provide an indication of whether

assessing growth and decline on a single dimension (continuum) results in a loss of

information.

Contrary to examining growth alone done in previous research, in the second

study, we investigated whether the presence or absence of decline items would

influence the amount of growth reported. Also, as in the first study, we examined the

relation between growth and decline and the role each play in reported well-being.

Participants were randomly assigned to complete either the PTGI or our version of the

PTGDI. We assessed the amount of decline reported by those who completed the

PTGDI to demonstrate the amount of information that would not be captured by the

PTGI if administered alone as it only assesses growth.

We expected that the PTGDI would capture more information than the PTGI.

When asking participants to only report the growth they experienced, their focus will

only be on growth, hence it is worth assessing whether they report different levels of

growth when asked about growth items alone versus along with decline items too. Furthermore, assessing growth *and* decline will provide meaningfully more information than just assessing growth alone.

In the third study, we also investigated the relation of growth and decline as well as their relation to measures of well-being. In addition to a replication of the first two studies, we also investigated whether the amount of growth and decline reported would differ for an event reported for the self or someone else and/or for an event that was manipulated to feel close or distant. We expected that more growth and decline would be reported for events for the self rather than for someone else and for events manipulated to feel distant rather than close. Furthermore, we expected that growth and decline together would provide more meaningful information than either would alone.

Study 1

The purpose of Study 1 was to investigate the relation between growth and decline as well as the relation of growth and decline to well-being. Posttraumatic growth and decline can be measured in different ways, and past research has sometimes used a continuum scale (with endpoints reflecting "great degree of decline" to "great degree of growth"; e.g. Armeli et al., 2001) and sometimes assessed reports of growth and decline using separate items for each. In the current study we use both approaches: some items were measured as a continuum and others asked about growth and decline separately. We expected that participants would report experiencing both growth and decline. Although one might guess that growth and decline would be negatively correlated (more growth associated with less decline), on the basis of past research (e.g., Joseph et al., 1993), we speculated that growth and decline might be unrelated. In other

words, high growth does not necessarily mean low decline, and some people might be

high (or low) on both while others might experience only one of the two outcomes. We

also expected that growth would predict higher well-being and decline would predict

lower well-being. Furthermore, we expected that both growth and decline will be more

predictive of well-being together than when used as independent predictors.

Method

Participants

One hundred and twenty four Wilfrid Laurier University undergraduate students

ages 18 to 21 ($M = 18.47$, $SD = 0.63$) were recruited to complete an online

questionnaire package in return for course credit. Two participants were excluded from

the study for failing to follow directions (they reported events that occurred outside of

the 3-year window instructions called for). At the end of the questionnaire package,

participants had the option to indicate if their answers were accurate and honest with no

consequences to receipt of their course credit. One participant indicated that he or she

had not been accurate and honest, thus was removed from the study. The data of 121

participants (23 men and 98 women) were analysed for the study.

Measures

Rosenberg Self Esteem Scale (Rosenberg, 1965). Participants completed a 10

item scale ($\alpha = .90$) assessing their self-reported self esteem. Sample items include, "I

feel that I have a number of good qualities" and "All in all, I am inclined to feel that I

am a failure" (recoded). Participants responded to questions on a scale of 1 (strongly

disagree) to 9 (strongly agree). Reverse items were first recoded then all items were

combined to create self esteem mean. Participants who score high on this scale are considered to have high self esteem.

Negative event elicitation. Participants were asked to describe a negative event they experienced in last three years that had a direct impact on them and their sense of well-being. Participants' events may have involved others, however must have had a direct impact on them. Participants also provided the estimated date at which the event occurred ($M = 16.37$ months, $SD = 11.47$ months). Participants reported a wide variety of negative events including: car accidents (2.5%), death of a close other (27.3%), relationship problems (32.2%), depression/attempted suicide (5%), failure (grades, school, job; 4.1%), health problems/addictions (11.6%), abuse (0.8%), and daily troubles (e.g. embarrassing events or disappointments; 6.6%). The events predominantly reported by participants were relationship problems (32.2%) and death of loved ones (27.3%). One participant described her relationship ending with her boyfriend as the negative event that had a direct impact on her, while another participant described the death of a loved one. Their respective descriptions of their events are below:

> My long time boyfriend and I broke up. He broke up with me out of the blue and I was so sick with the hurt that it affected me physically and I fainted on my dad the morning after it happened. I spent months crying and I lost friends who did not know how to balance the friendship they had with me with the friendship they had with him.

Just about a year ago one of my best friends past away in a car crash. I remember the day when I went to hospital to see all my friends there. Everyone was ok, however he was airlifted to a different hospital due to severe head trauma, he never made it. The hardest thing I have ever done was bury one of my best friends and I hope to never have to do it again.

It is apparent that both events were impactful for the participants even though the events may have differed on objective severity.

Negative event features. After describing their negative event, participants completed questions concerning the event (features were assessed with single item measures; see Appendix A for items). The event features were broken down into past features, current features, and temporal features (described below). Regarding past features, participants rated the severity of the event, valence of the event, and importance of the event. They also reported the extent they perceived the cause of the event to be the self, someone else, external circumstances, and bad luck. For the current event features, participants rated likelihood of the event reoccurring or the chances of encountering a similar event. Participants also indicated if they felt the event was completed (over and done with), if they were still experiencing consequences from the event and whether the consequences were primarily positive or negative. Participants responded to all items on a 7 point scale ranging from 1 (not at all) to 7 (very).

Temporal features. Temporal features were assessed in two ways; participants reported both a) their perceived similarity between their current and past identity (who they were prior to the negative event) and b) their perceived closeness to the event. To assess perceived similarity between their present and past identity (Identity Overlap),

participants were asked report the extent they felt their identities were integrated from a

diagram of circles which overlap to varying degrees (see Appendix A). Higher values

indicated greater overlap between past self and current self. To measure perceived

closeness to the event, participants rated how close the event *felt* to them on a scale of 1

– 9 (1- feels very close, 9 – feels very distant) as well as how long ago the event felt,

ranging from 1 (feels like yesterday) to 9 (feels like a long time ago). The two latter

items were combined to create an overall measure of subjective temporal distance

(α = .86).[4] Participants who reported higher scores indicated that their event felt further

away.

Posttraumatic Growth and Decline Inventory (PTGDI) (Adapted PTGI

Tedeschi & Calhoun, 1996). Previous researchers (e.g. Wortman, 2004) have criticized

the PTGI as it does not allow participants to report the negative consequences which

may occur along with the positive consequences as a result of negative events.

Furthermore we argued that another potential problem with the PTGI is that some items

do not clearly reflect growth in their wording. To address these problems, we created

the PTGDI and divided it into two sections (see Appendix A).

Continuum items. The first section was created to address the problem of

ambiguous wording of some of the items in the original scale. In the scale provided in

Tedeschi and Calhoun (1996), there were 11 items which were ambiguously worded

and it was not clear that these items reflected growth. For example, change in the item

"My priorities about what is important in life" may not be reflective of growth as it is

not clear that the change in priorities is a positive change. Thus is it difficult to know for

---

[4] Items were positively correlated (r = .76).

certain that the participants who report *change* on this item are truly reporting *growth*. For instance, someone who feels her priorities have gotten clearer, and someone else who feels his priorities have become less clear might *both* report a high degree of "change" on the PTGI, but both responses would have been interpreted as "growth" according to how the scale is coded. It is possible that these items could reflect growth *or* decline, for this reason, we adjusted the scale for 11 items to an 11 point scale, to allow participants to clearly indicate the direction of the changes they reported. Participants were then able to report if the changes occurred in the decline direction (1- gotten a lot worse), had not changed (6- stayed same) or the changes were in the positive direction (11- improved a lot). There were minor adaptations to these items to allow response on a continuum. The items are presented in Table 1. In addition, because there are items in the PTGI that assess spiritual growth and not everyone has religious or spiritual beliefs, participants were given the option of selecting "not applicable" (N/A) for this scale.[5] These items were combined to create the growth and decline continuum score which had good reliability, $\alpha = .91$. Higher scores indicate reports in the direction of growth.

Separate growth and decline items. The items in the second section were created to address the criticism that the PTGI neglects to consider the negative consequences along with the positive consequences that may result from negative events. To address this criticism, the remaining 10 items in the PTGI that clearly reflected growth were mirrored to create decline items that would assess the negative consequences that were

---

[5] Although there were no religious/spiritual items in the continuum scale, to keep the PTGDI scale consistent participants were provided with N/A option for these items as well. The proportion of participants who selected N/A ranged from 0 to 2%.

previously omitted. The wording of some growth items was adjusted slightly for clarity. The adjusted growth items as well as the decline items are presented in Table 2. For instance, the item "I have developed new interests" is reflective of growth but does not allow for participants to report that since the event they have lost interests. Therefore, we created the item "I have lost interest in the things I used to enjoy" allowing participants to report the negative consequences they have experienced since the event. Similar to the PTGI items, participants responded to 10 decline items on a 6 point scale (1 – no degree of change to 6 – a very great degree of change). The items in this section were computed into three scores, posttraumatic growth and decline scores and an overall growth and decline difference score. Growth and decline items were calculated into separate growth and decline means. Similar to the continuum items, participants were provided with the N/A option for the separate items.[6] The reliability of both growth and decline scores were good (both were $\alpha = .86$). High scores indicated high growth or high decline. The growth and decline difference score calculated by subtracting each decline item from its corresponding growth item. High scores on this measure, then, reflect high growth in relation to decline.

Satisfaction with Life Scale (Diener, Emmons, Larsen, & Griffin, 1985). Participants completed a 5 item questionnaire ($\alpha = .88$) which assessed their current life satisfaction. Participants answered questions such as "In most ways my life is close to my ideal," and "The conditions of my life are excellent," on a scale of 1 (strongly disagree) to 7 (strongly agree). Items were combined to create an overall mean for life

---

[6] The proportion of participants who selected N/A ranged from 0 to 12% with the majority (6-12%) selecting the option for religious/spiritual items.

satisfaction. Participants who report high scores are considered to have higher life satisfaction.

PANAS (Adapted from Watson, Clark, & Tellegen, 1988). Participants completed a 36 item questionnaire (positive affect α = .94, negative affect α = .89) assessing their mood at the moment of the study. Participants rated on a scale of 1 (very slightly or not at all) to 5 (extremely) the extent that they felt each of the emotions listed at the present moment. Emotions ranged from negative emotions such as, irritable, distressed, upset, nervous, etc. to positive emotions such as, glad, thankful, inspired etc. Positive emotion and negative emotion items were separately combined to create positive affect and negative affect means. High scores indicate high positive or high negative affect.

Procedure

Participants completed the questionnaire package online where they first completed a demographic section consisting of age, gender, and religious beliefs. Participants then completed the Rosenberg's (1965) Self Esteem Scale, followed by the description a negative event from the last three years and provided the estimated date of occurrence. Next, participants answered questions concerning the negative event they described retrospectively assessing the features of the event at the time (how they perceive they felt at the time of the event). Subsequently, participants indicated their perceived closeness to their past self and their negative experience (Temporal Features). Afterward, participants reported their current ratings of the event's features (how they feel about the event in the present). Participants then completed the PTGDI, followed by measures of well-being (Life Satisfaction, PANAS). Lastly, to counter the effects of

recalling a negative event, participants were provided with a mood booster, where they described a very positive event from the past two years that had a direct impact on them and had provided them with positive feelings. At the end of the study, participants were provided with an opportunity to indicate whether they answered the questionnaire package accurately and honestly without penalty and then were debriefed.

Results and Discussion

The results of the first study are divided into three sections. The first section discusses the relation between growth and decline and addresses one of the main criticisms of the PTGI: the sole focus on growth. The first section also discusses the amount of growth reported when the items are assessed separately or on a continuum. The second section extends the literature by investigating how growth *and* decline predict psychological outcomes of negative events, such as well-being. Lastly, the third section examines whether the features of the event predict the amount of growth and decline reported. The means and standard deviation of all measures are presented in Table 3.

Relation between growth and decline

We first sought to investigate whether there was a relation between the growth and decline participants reported. For this section, we examined this relation only using the separate growth and decline means. It could have been expected that individuals who report experiencing growth from a negative event will in turn report experiencing less decline and vice versa. However this was not the case, results showed that participants reported experiencing both growth and decline. As shown in Table 4, there was a positive relation between growth and decline which indicated that participants

who reported greater growth also reported greater decline. Although, not unrelated as found in previous research, the positive relation between growth and decline still supports the idea that greater growth does not imply less decline, as would be suggested by a negative relation. Moreover, we wanted to examine the percentage of participants who reported experiencing both growth and decline. To assess this, participants who reported some degree of change for growth (2 or more on the 6 point scale) were coded as a 1 (otherwise 0) and the same was done for decline. A frequency analysis allowed us to examine how many people reported growth, decline and both. Twenty-nine percent of participants reported experiencing some degree of *both* growth and decline. This suggests that these constructs are orthogonal and people are capable of reporting the experience of both.

Mean levels of growth and decline assessed in multiple ways

We also examined the difference between reporting growth and decline on separate dimensions or on a single continuous dimension. To assess this, the PTGDI items were computed into four separate scores: growth and decline as two separate scores, the growth in relation to decline difference score, and the continuum score (growth and decline on a single dimension). Table 4 reveals that when participants reported growth and decline on one dimension (continuum score), it was positively related to reports of growth when assessed on a separate dimension as well as the difference score (growth in relation to decline). No significant relation was found between continuum score and decline assessed on its own dimension. It appears that the variability reported on the continuum items may be more associated with growth. However, it is possible, although only speculated, that participants may have

experienced both growth and decline on these items, but because they were unable to

express both, they favoured the stronger of the two.

Next, we wanted to examine if on average participants reported a significant

amount of growth and decline as well as whether the growth reported exceeded the

amount of decline reported. To assess this, we conducted 4 one sample t-tests where the

PTGDI scores were tested against the value of 'no change' (a value of 1 for growth and

decline scores and a value of 6 for the continuum score); or in the case of the difference

score, compared with the value of 0 (no growth over decline) which either indicated 'no

change' or equal amounts of growth and decline reported. If the difference score is

above 0 this would indicate that more growth reported than decline, however if the

score is below 0 this would indicate that participants reported more decline than growth.

As shown in Table 5, participants reported significant amounts of both growth and

decline when assessed on separate dimensions and a significant amount of growth when

assessed on the continuum. In addition, participants reported more growth in relation to

decline when the difference score was examined.

Furthermore, in Table 5, when examining the means descriptively, it appears

that participants reported more growth when growth was measured on a separate

dimension ($M = 2.85$, $SD = 1.07$) than when decline was taken into consideration

through the difference score, ($M = 1.03$, $SD = 1.16$) or the continuum score ($M = 1.75$,[7]

$SD = 1.54$). It seems that when examining growth alone scores participants may report

higher levels of growth than when it is in the context of decline. A similar pattern is

apparent in Table 6, when growth and decline were measured on separate dimensions,

---

[7] This mean was calculated by subtracting 6 (value of no change for the continuum score) from each of
the participants' continuum score.

77% of participants reported growth and 32 % of participants reported decline.

However, when the growth and decline difference score was examined, only 51% of

participants reported relative growth and 15% reported relative decline. The PTGI

would only have measured the amount of growth indicated by these participants,

without taking into account the degree of decline participants report experiencing. This

would result in a misleading assessment of the amount of growth experienced overall by

failing to consider it in the context of decline.

Role of growth and decline in well-being

It is evident that assessing both growth and decline provided more information

than assessing growth or decline alone, however how does the relation between growth

and decline predict psychological outcomes, specifically well-being? It would be

expected that those who report greater growth would fare well on measures of well

being, however when growth and decline were entered alone into separate regression

analyses, this was not the case. As shown in Table 7, growth alone was only predictive

of positive affect such that higher reported growth was only significantly predictive of

greater positive affect, whereas higher reported decline predicted each of the other

measures of well-being. Specifically, participants who reported higher decline also

reported higher negative affect, as well as lower life satisfaction and self esteem. In

addition, when assessing the growth in the context of decline (difference score), it was

found that participants who reported greater growth on the difference score were more

likely to report increased well-being. However, when assessing growth and decline on a

single dimension (continuum score), the pattern of predicting higher well-being was no

longer consistent. The continuum score was no more informative than growth alone.

One reason that growth is not consistently related to well-being may be due to the effects of decline on the relation between growth and well-being. Thus, in addition to assessing growth and decline alone, we conducted additional regression analyses examining how growth and decline entered together (in one step) and their interaction (in another step) predicted each measure of well-being. When controlling for decline, there is little change to the relation between growth and well-being, with exception of life satisfaction (see Table 7). When controlling for decline the relation between growth and life satisfaction becomes significant. Given that growth and decline are positively related, it may be that when controlling for decline any shared variance is removed, no longer suppressing the relation between growth and life satisfaction.

In general, growth and decline together were more predictive of well-being such that greater reported growth was associated with higher well-being whereas greater reported decline was related to lower well-being. It appears that examining growth and decline together improved their relation to well-being (however, more so for growth than decline, as decline alone was consistently predicted to well-being) with the exception of positive and negative affect. Growth and decline were independently predictive of affect such that growth was predictive of higher positive affect and decline was more predictive of high negative affect. Although, growth and decline seem to predict affective outcome better independently, there seems to be more value in assessing both growth and decline as assessing them alone would only provide half of the story. Moreover, it is clear that assessing growth and decline on a continuum results in loss of information as its ability to predict well-being is only to the caliber of growth alone.

In addition to the finding that growth and decline appear to differentially predict aspects of well being, we examined whether levels of growth and decline might interact to predict outcomes. We found that the only significant interaction occurred for life satisfaction.[8] As shown in Figure 1, a significant two-way interaction of growth and decline on life satisfaction was found. For participants who reported high decline (one standard deviation above the mean), greater reported growth predicted greater life satisfaction, $\beta = .56$, $t(117) = 4.83$, $p < .001$. However, among those who reported low decline (one standard deviation below the mean) growth was no longer predictive of life satisfaction, $\beta < .001$, $t(117) = -.004$, $p = .10$. This may suggest that the level of decline may moderate the relation between growth and life satisfaction, revealing that without decline, the relation between growth and well-being may be misinterpreted. It would appear that reporting growth alone only results in making people feel good at the time of the study, however assessing growth and decline may indicate that this is not the case. Instead, it appears that only under situations of high decline is growth related to well-being. This finding is consistent with the theory of shattered assumptions (Janoff-Bulman, 1992; Tedeschi & Calhoun, 2004) such that only when an event is challenging enough that it shatters someone's assumptions of the world do people experience growth from the event. The inclusion of decline seems to result in a meaningful link between growth and well-being.

---

[8] Because it appeared that growth and decline were generally predictive of measures of well-being in the expected direction but not significant, a positive outcome composite was created. First negative affect items were recoded to reflect a positive direction and combined with life satisfaction, positive affect and self-esteem (although participants reported self esteem as a pre-measure, because all measures were completed in a single time frame we decided to assess self esteem as a measure of well-being). Variables were positive related ($\alpha = .66$) with correlations ranging from .29 to .56 (with the exception of positive and negative affect which were unrelated, $p = .54$). However, the positive outcome composite was not significantly predicted by the interaction.

Do the features of the event predict growth and decline?

In addition to investigating the relation between growth and decline and how they predict measures of well being, we examined whether features of the event (past, present and temporal) would predict reports of growth and decline.

Past features (feelings at the time of the event).[9] It might be expected that features of an event (e.g. severity and importance) would be related to the amount of growth and decline reported. Surprisingly this was not the case, Table 8 revealed that in general past features showed little to no association to growth and decline alone. Even when controlling for decline, past features were still not predictive of growth. However, past features were most predictive of the growth and decline reported on a continuum. When participants reported more growth on the continuum, they were more likely to report perceiving the event as more severe, more negative, more important and more bothersome at the time it occurred. However, past features were less predictive of greater reported decline, where greater reported decline was only associated with reports of the event as more positive and resulting from bad luck. It seems counter-intuitive that participants who reported greater decline also reported perceiving the event as more positive, thus is it not clear why this relation exists. Concerning the relation between decline and bad luck, it may be that for those who reported greater decline, they attributed the event as bad luck because they may have felt little or no control over the event. Features at the time of the event were not predictive of growth (alone or controlling for decline) or the difference score. It is not clear why the predictions were strongest with the continuum score.

---

[9] Participants reported their past feelings retrospectively, indicating how they think they felt at the time of the event.

Current features (feelings in the present). It was also expected that participants' current feelings regarding their event would be predictive of the growth and decline reported. However, as shown in Table 9, there were few relations of growth and decline with current features. The only current features predictive of growth and decline were participants' reports of whether the consequences of the event continued and the valence of the consequences. When participants reported that the consequences of the event continued into the present, it predicted greater reported decline. However, when consequences were perceived to be primarily positive, participants were more likely to report greater growth. When controlling for decline, there was little change to the relation of growth and current features. No other features were significant predictors of growth and decline.

Temporal features. It was expected that temporal features would be associated with the growth and decline reported. However, as shown in Table 10, relatively few relations were found between temporal features and growth and decline. Only the perceived overlap of identities was predictive of reported growth and decline. Participants who perceived less overlap between their current self and past self (who they were prior to the event) also reported greater growth and greater decline. In other words, participants who reported feeling as though they are no longer the same person they used to be, reported that they experienced more growth *and* decline. There was no significant relation between other measures of subjective distance and reports of growth and decline. Furthermore, when controlling for decline, there was little change to the relation of temporal features to growth.

It may be that an individual who reported greater growth and decline since their negative event, no longer perceives his or herself to be the same person anymore as a result of the event. The event may have been difficult enough that it shattered their world assumptions and he or she began rebuilding these assumptions, thus changing internal beliefs, an essential part of the self and beginning the growth process (see Janoff-Bulman, 1989; 1992; Tedeschi & Calhoun, 2004). Although the focus of previous research is on reported growth, greater report decline may be additional evidence of the rebuilding process as it is argued that the event must be challenging enough to shatter the assumptions; greater reported decline is an indication of the negative consequences of the event.

Study 2

Study 1 provided some insight into the relation of growth and decline and the role that growth and decline play in reported well-being. In general, both growth and decline together seemed to be more informative than growth scores alone. Also, it is interesting to note that growth and decline were also predictive of affective outcome independently. Although assessing both growth and decline were more informative, there are still some unanswered questions. The purpose of Study 2 was threefold: a) to replicate Study 1 demonstrating the importance of assessing both growth and decline, b) to examine whether reports of growth would differ if participants were randomly assigned to complete either a revised version of Tedeschi and Calhoun's PTGI (the assessment of growth alone), or our further revised version of the PTGDI (assessing both growth and decline as separate components) and c) to examine whether growth scores have different predictive value depending on condition. Study 2 was a

comparison of two studies: a study using only the PTGI to a study using the PTGDI to determine the degree to which measuring both meaningfully adds additional information. By comparing a condition measuring the PTGI to one with the PTGDI, we can assess the degree to which growth may appear artificially inflated if assessed in the absence of the opportunity to report on decline. We expected that there would be a substantial percentage of participants who will report experiencing decline and participants who will report experiencing both growth and decline.

Additionally, another question that one might ask is whether growth alone or growth and decline will be more predictive of well-being. Hence another purpose of the study was to examine how well the original PTGI (versus the PTGDI) would predict measures of well-being. We expected that growth and decline reported on the PTGDI would be more predictive of well-being than the growth reported on the PTGI (growth alone), and that greater growth relative decline would predict increased well-being.

Method

Participants

Eighty four (24 men and 60 women) Wilfrid Laurier University undergraduate students ages 18 to 38 (M = 19.80, SD = 2.74) were recruited to complete an online questionnaire package in return for course credit. Participants were divided into two conditions: growth and decline condition (43 participants) and growth only condition (41 participants). One participant was excluded for failing to follow directions (he or she reported a negative event that was outside the 3-year window instructions called for).

Measures

Rosenberg Self Esteem Scale (Rosenberg, 1965). Participants completed the Rosenberg Self Esteem scale, $\alpha = .90$ (please see Study 1).

Negative event elicitation. As in Study 1, participants provided a description of a negative event they experienced in the last three years that had a direct impact on them.

Negative event features. Similarly to Study 1, participants answered questions concerning the event they described which assessed past, current and temporal features of the event (assessed on single items). However, in the second study participants did not report on the cause of the event. Participants responded to each of the past features on a scale of 1 (not at all) to 7 (very much). In addition to some of present features assessed in the first study (e.g. avoiding similar event and extent completed), participants were also asked to imagine that their event had NOT occurred. From this scenario they were asked to what extent they would change the event if given the opportunity and the extent that the person they would be had the event NOT occurred (parallel self) would be superior or inferior to who they currently are. Participants answered current features on a 7 point scale (see Appendix B for items and anchors).

Temporal features. As in Study 1, participants were asked to rate how close they felt to the event and their past self prior to the event.

Posttraumatic Growth Inventory (Revised PTGI; version provided by authors). Participants in the growth only condition completed Tedeschi and Calhoun's 21 item questionnaire which assessed the amount of growth participants reported from negative events. Participants answered items such as "I have a greater sense of closeness with others" and "I can better appreciate each day," on a scale of 1 (no change) to 6 (very

great degree of change) as an indication of how much change they experienced since the

event. Unlike the version provided in Tedeschi and Calhoun's (1996) article, this

version contained a smaller number of ambiguously worded items. However, to

preserve the originality of the scale these items were not adjusted. In addition, to be

consistent with our version of the PTGDI, participants were provided with the N/A

option for these items.[10] The items from the scale were computed into an overall

growth mean and in addition, relevant items were combined into the five factors. The

five factors included: relating to others, new possibilities, personal strength, spiritual

change, and appreciation of life. These means, however, only comprised of the amount

of growth participants reported. Participants who score high on this scale are considered

to have experienced a great degree of change from the event in the positive direction.

The PTGI's overall reliability ($\alpha = .94$) and the reliability of each of the factors were

good (relating to others, $\alpha = .91$, new possibilities, $\alpha = .84$, personal strength, $\alpha = .81$,

spiritual change, $\alpha = .80$ and appreciation of life, $\alpha = .81$).

Posttraumatic Growth and Decline Inventory (Adapted from Tedeschi &

Calhoun's PTGI, revised version provided by authors). Similarly to the first study,

participants in the growth and decline condition completed a questionnaire assessing

both types of consequences they reported experiencing as a result of their negative

event. However, because there were few items in the recent version of the PTGI with

ambiguous wording, all items from the PTGI were mirrored to create items in the

decline direction as opposed to having some items on a continuum and some on

separate dimensions. Thus participants completed a 42 item questionnaire with growth

---

[10] The proportion of participants who selected N/A ranged from 2 to 7%. Two percent of the sample
selected this option for religious/spiritual items.

and decline items interspersed. Mirror items were created in a similar fashion to the first study.[11] Some examples of decline items were "I have come to realize that I'm not as strong as I thought I was" and "I am more guarded with my emotions." Participants reported their responses for each of these items on the same scale as the first study ranging from 1 (no change) and 6 (very great degree of change). As in Study 1, participants were also provided with the N/A option to address the possibility that participants may not have religious or spiritual beliefs, thus would not be able to indicate change on these items.[12] The items were calculated into growth and decline means, the difference score (amount of growth relative to decline) and the five factors. Participants who report high scores on overall growth and the difference scores are considered to have greater reported growth. The growth items ($\alpha = .90$) and the decline items ($\alpha = .93$) both had good reliability. The reliability of the items for each factor assessing the growth side was good (relating to others, $\alpha = .80$, new possibilities, $\alpha = .82$, personal strength, $\alpha = .80$, spiritual change, $\alpha = .83$, and appreciation of life, $\alpha = .69$). The reliability of the items for each factors assessing the decline side were good (relating to others, $\alpha = .84$, new possibilities, $\alpha = .89$, personal strength, $\alpha = .79$, spiritual change, $\alpha = .78$, and appreciation of life, $\alpha = .86$).

Satisfaction with Life Scale (Diener et al., 1985). Participants completed the 5 item questionnaire ($\alpha = .85$) assessing their satisfaction with life (see Study 1).

---

[11] Outside of the newly created decline items from the previous ambiguous items in Study 1, one decline item was adjusted to make item more parallel with the growth item. The item "My capacity to cope with difficulties has deteriorated" was changed to "I have come to realize that I'm not as strong as I thought I was" to better parallel the growth item "I discovered that I'm stronger than I thought I was."

[12] The proportion of participants who selected N/A ranged from 0 to 19%. In general, a greater percentage of participants (9-19%) reported N/A for religious/spiritual items (with the exception of a couple items: "I am more able accept needing others" and "I find it difficult to make good connection with others" where 12 - 14% of participants selected the N/A option).

PANAS (Adapted from Watson et al., 1988). Similar to the first study,

participants completed a questionnaire (positive affect, $\alpha = .92$, negative affect, $\alpha = .91$)

assessing their current mood while completing the study. However unlike Study 1

which listed 36 emotions, the PANAS in Study 2 included only 18 items (positive and

negative emotions).

Procedure

Similar to Study 1, participants completed an online survey package; but in this

study participants were randomly assigned to one of two conditions (growth and decline

vs. growth-alone). The random assignment was carried out electronically when

participants signed up for the study online. Once participants were assigned to their

condition they completed their assigned survey. As in Study 1, participants first

completed a demographics page then they completed the Rosenberg's (1965) Self

Esteem scale. Next, as in Study 1, participants described a negative event and provided

the estimated date of the event. After participants described their event, they rated past

features of the event retrospectively (their recalled perception of the event at the time it

occurred). Next, participants indicated how close they felt to the event and their past

self (Temporal Features). Subsequently, participants in growth and decline condition

completed our revised PTGDI while those in the growth-alone condition completed the

original PTGI. Afterward, participants rated the current features of the event reflecting

their present feelings regarding their event. Participants then completed Diener et al.'s

(1985) life satisfaction and Watson et al.'s (1988) PANAS. Lastly, as in the first study,

participants described a positive event from the past two years as a mood booster and

were provided with an opportunity to indicate whether they answered the questionnaire

package accurately and honestly without penalty. Upon completion of the study participants were debriefed.

Results and Discussion

The results of the second study are divided into four sections. In the first section we discuss whether the amount of growth differed by condition. Then as in the first study, the second section discusses the relation between growth and decline and provides an indication of the amount of decline missed by the PTGI. The third section, as in Study 1, extends the literature examining the relations of growth and decline with reported well-being. Finally, the fourth section discusses the relation of growth and decline with past and present features of the negative event participants described. The means and standard deviations of all measures are available in Tables 11a and 11b.

Does the amount of growth reported differ by condition?

In this study we were able to examine whether the reported level of growth would differ depending on whether participants reported on growth alone or in the context of decline items as well. It is possible that when growth was assessed alone the amount of reported growth could be inflated. However, a comparison of the growth-only items in the growth alone condition versus the growth and decline condition revealed no difference in the amount of growth actually reported by condition ($M = 3.57$, $SD = 1.11$ in the growth alone condition and $M = 3.29$, $SD = 1.00$ in the growth and decline condition), $t(81) = 0.23$, $p = .62$. This indicates that reporting growth in the same questionnaire as decline does not *reduce* people's perceptions of growth on the growth-items themselves. From these findings, it can be concluded that

people, on average, report considerable growth, even when decline is also reported but that without decline, only part of the story is known when growth is assessed alone.

Relation between growth and decline

After examining whether the amount of reported growth differed by condition, as done in Study 1, we sought to investigate whether there was a relation between the growth and decline participants reported.[13] In Study 1 we found that growth and decline were positively related, however in the current study, as shown in Table 12, there was no significant relation between posttraumatic growth and decline. Although inconsistent with Study 1, both studies support our expectation that growth and decline are not negatively related. Furthermore, as examined in Study 1, we wanted to examine whether participants reported experiencing both growth and decline. Once growth and decline means were coded (1 for 2 or more on 6 point scale or 0 otherwise), a frequency analysis revealed the number of participants who reported some degree of change on growth, decline and *both*. Forty-seven percent of participants in the growth and decline condition reported experiencing *both* consequences, whereas, in the growth-alone condition we were unable to assess this as participants were unable to report decline. This further indicates that both growth and decline can be experienced.

Are the amounts of growth and decline significant? Similar to the first study, we sought to examine if the amount of growth participants reported was significant. In the growth-alone condition (using the original PTGI), we compared the mean growth reported to the value of 1 (which indicates "no change" on the scale). As demonstrated

---

[13] In this study we were only able to assess the amount decline in the "growth and decline" condition, thus the assessment of growth in relation to decline will be specific to that condition.

in Table 13, participants reported levels of growth differed significantly from 1 or "no growth" on the overall growth score and on each subscale. In the growth and decline condition, both growth and decline separate means were also compared to a value of 1 ("no change" on the scale) and it was found that all the means were significantly different from "no change." Additionally, in this condition, we calculated a growth and decline difference score. Scores higher than zero represent more growth than decline whereas scores lower than zero represent more decline than growth. Therefore, for this condition, mean scores were compared to the score of 0 (instead of 1) because 0 would represent the case where growth was equal to decline (or where no change on either was reported). Using this approach, people again reported greater levels of growth relative to decline on average, with mean scores being significantly higher than 0 for the overall PTGDI and all subscales with the exception of spiritual growth (which was marginal).

Another way to compare the PTGI and the PTGDI is to examine the experiences that the PTGI fails to capture. As shown in Table 14, when we examined the percentage of decline participants reported, we found that relative to the growth reported, 16%[14] of participants reported more decline than growth, while those in the growth-alone condition were simply not able to indicate the decline they might have experienced. Hence, the dominant reported experience for approximately a quarter of the sample was that of decline, and this was not captured in the growth-alone condition. In addition, when only growth is reported, 90% of participants report some growth overall, and report growth on each of the subscales (72% to 97%). In contrast, when participants report both growth and decline, the percentage of people who report *more growth than*

---

[14] When examining the decline mean alone 51% of participants reported experiencing some degree of decline from their event.

decline (scores higher than 0) are lower: 49% overall, with subscales ranging from 38%

to 51%. It is evident that approximately half of participants are reporting decline when

given the opportunity to, while those without such opportunity, their level of decline

remains unknown.

Role of growth and decline in well-being

It has been found that assessing growth without decline can result in a

significant loss of information, however does assessing both growth and decline

contribute differently to our ability to predict well-being, as found in Study 1? As

shown in Table 15, in general assessing growth alongside decline seems to be more

predictive than growth alone. When examining the relation between the growth

participants reported in the growth-alone condition and well-being, greater reported

growth was only consistently related to positive affect (with the exception of spiritual

growth which is not significantly related to well-being). Furthermore, it is interesting to

note that growth alone in the growth and decline condition appears to be more

predictive of well-being than growth alone reported on the PTGI (growth alone

condition). In addition to examining the relation between growth alone and well-being

by condition, the relation between decline alone and well-being was also investigated.

As shown in Table 16, in the growth and decline condition, decline was consistently

predictive of well-being (with the exception of positive affect). We were however

unable to assess decline in the growth alone condition as the PTGI does not give

participants the opportunity to report decline. Furthermore, when examining the growth

in the context of decline (difference score), it was consistently predictive of well-being

such that greater reported growth was related to higher well-being (see Table 17). In

general, growth and decline alone were predictive of well-being such that greater reported growth was reasonably predictive of higher well-being and greater reported decline predicted lower well-being. Results seem to suggest that the PTGDI is overall a better predictor of well-being as it takes decline into consideration while the PTGI does not.

In addition to examining how growth and decline alone predicted well-being we examined how growth and decline together and their interaction predicted well-being. Similar to Study 1, we conducted four hierarchical regressions with measures of well-being (life satisfaction, positive and negative affect, and self esteem) where growth and decline were entered in one step and the interaction was entered in another. It was found that growth and decline together were generally predictive of well being, such that greater reported growth was linked with increased well-being and greater reported decline was associated with decreased well-being (see Table 18). In addition to both predicting well-being, it was found that growth and decline were also independently predictive of positive and negative affect. Furthermore, growth and decline interacted to predict increased well-being, such that for participants who reported high decline (1 standard deviation above the mean), greater reported growth was predictive of greater positive affect, $\beta = .68$, $t(39) = 3.9$, $p < .001$, and higher self esteem, $\beta = .67$, $t(39) = 4.28$, $p < .001$. However, those who reported low decline (1 standard deviation below the mean), greater reported growth was no longer predictive of positive affect, $\beta = .21$, $t(39) = 1.14$, $p = .26$, or self esteem, $\beta = .19$, $t(39) = 1.14$, $p = .26$. Although life satisfaction and negative affect were not significantly predicted by the

interaction of growth and decline, the general pattern was in the same direction as positive affect and self esteem.

As similar patterns were found with the interaction of growth and decline, as done in Study 1, we created a composite of positive outcomes, where life satisfaction, positive and negative affect and self esteem were combined. Negative affect items were recoded to reflect a positive direction before being combined with the other measures[15] (α = .76). When growth and decline were entered separately in the first step, both were significant predictors of positive outcome. Additionally as shown in Figure 2, there was a significant interaction of growth and decline on positive outcome: among participants who reported high decline, greater reported growth predicted greater positive outcomes, β = .70, $t(39)$= 5.16, $p < .001$, whereas among those reporting low decline, growth was not associated with positive outcomes, β = .22, $t(39)$= 1.52, $p = .14$.

These results further support the importance of assessing both growth and decline as both together tell a more encompassing story of the consequences of negative events. It seems that only when individuals report that they have experienced a higher degree of negative consequences from their event does growth have a link to well-being, otherwise regardless of the growth reported there was no relation to well-being. This is once again consistent with the theory of shattered assumptions (Janoff-Bulman, 1992; Tedeschi & Calhoun, 2004). Only when an individual finds an event challenging and experiences high decline do they experience growth and positive outcome from the event. Baker et al. (2008) have speculated that because people typically report less decline than growth, decline may not be worthwhile to measure alongside growth. Our

---

[15] These measures were positively related with correlations ranging from .41 to .64.

findings suggest otherwise: although decline levels, on average, were lower than levels of growth, taking decline into account appears to have substantially enhanced the measure's ability to predict well-being.

Do the features of the event predict growth and decline?

Past features. Similar to Study 1 we examined the past features of the event, specifically regarding what they recall feeling at the time of the event, and how these feelings predicted reports of growth and decline. In general, as shown in Table 19, when examining growth alone reported on the PTGI (growth alone condition) no relations between growth and past features were found. Examining growth assessed with decline (whether growth alone, growth controlling for decline or the growth and decline difference score), there were relatively few relations with past features, with most of the relations emerging for two factors (new possibilities and spiritual growth; see Tables 19 and 20). Although the PTGDI related to relatively few features, more information was gained from assessing both growth and decline.

Current features. Similar to the first study, the relation of growth and decline with current features was examined. As shown in Table 21, in general growth alone (in either condition) was related to relatively few current features. Furthermore, when controlling for decline, the relation of current features to growth remain relatively unchanged. In comparison, the growth and decline difference score was related to more current features of the event than past features and more informative than growth alone (see Table 22). Participants who reported greater overall growth (on difference score) were more likely to also report that the event feels more completed. Also, participants with greater reported growth also reported that if provided with the opportunity to

change their event, they would not change it and that their parallel self (who they would

be had the event NOT occurred) would be more inferior to who they currently are.

Similar patterns were found with greater growth reported in some of the sub-factors.

These results further support the importance of assessing both growth and decline. Only

focusing on growth, as done by the PTGI, results in a loss of information.

Temporal features. As done in the first study, we examined the relation of

temporal features with growth and decline. As shown in Table 23, unlike the other

features, relatively consistent relations were found between the PTGI and months since

the event, such that more growth was reported for events that are estimated to be further

away in actual time. Furthermore, greater reported growth on the PTGI was also related

to the perceive similarity between the past and current selves. Specifically, those who

reported more growth in the growth-alone condition, reported less overlap between who

they are now and who they used to be prior to the event. This pattern was consistent

with the sub-factors with the exception of 'personal strength' which was marginal.

However, growth (alone and controlling for decline) and the growth and decline

difference score reported on the PTGDI were not predicted by temporal features (actual

time or subjective; see Table 24).

The relation between greater growth (reported on the PTGI) and less overlap

may suggest that participants feel that their event was a transitional event where aspects

of their identity changed, potentially as a result of rebuilding world assumptions (see

Janoff-Bulman, 1989; 1992). It is not clear why there were no relations between the

PTGDI and temporal features but consistent relations between the PTGI and these

features. However, one may speculate that when participants only report on growth (as

done with the PTGI), their focus is biased to only the positive consequences of their

events, thus they may feel that they have experienced greater change in comparison to

their past self and that a greater amount of actual time has passed.

Study 3

Both studies clearly demonstrate the importance of assessing both growth and

decline; these constructs provide more information when assessed together than when

growth is assessed alone as in the PTGI. Both studies show that growth and decline

entered together, as well as their interaction, were more predictive of well-being than

growth (or decline) scores alone with the exception of affective outcome where growth

and decline were independently predictive of positive and negative affect. Furthermore

Study 2 demonstrates how administering the PTGI alone tells only part of the story,

failing to capture a substantial amount of reported decline that occurred alongside the

growth. Focusing on growth alone gives the illusion that after negative events people

only experience positive changes. Similarly, although decline alone was more predictive

than growth alone, focusing solely on decline also misses the broader picture and could

suggest that people only suffer from these events. It is important to examine the growth

people report experiencing however, growth becomes more meaningful when

examining it in the context of decline. Our findings support the small past literature

which suggests that assessing both growth and decline captures a fuller range of the

consequences of negative events (e.g. Joseph et al., 1993).

Although Studies 1 and 2 both demonstrate that people report significantly more

growth than decline as a result of adverse events, we cannot address the authenticity of

these changes. It is possible that the changes (positive and negative) that people

reported following their negative event were authentic. However, it is also possible that these changes were *perceived*, perhaps as a result of distorting one's former (pre-adversity) qualities (e.g., McFarland & Alvaro, 2000) to enhance the current self when a threatening event is salient. Even the relations of growth and decline with well-being do not rule out the possibility that perceptions of growth are self-enhancing distortions. Typically, people are less inclined to enhance perceptions of others than they are for perceptions of the self. However, evidence of post-adversity growth reported for events that occurred to others (rather than the self) is limited. McFarland and Alvaro (2000) found that people were more likely to derogate a past self after being primed with a serious negative event than to derogate the past of an acquaintance, resulting in the illusion of greater improvement for the self. Park et al. (1996) on the other hand, found little difference between the reports of self and close other in the degree of stress-related growth reported. The goal of the present study was to examine the growth reported for an event that has happened to the self in comparison to the growth reported for an event that has happened to someone else. We randomly assigned participants to recall an event that happened to the self or to another. If the growth reported in the first two studies is a result of self enhancement, we would expect that participants who report an event for the self will report higher levels of growth than participants who report an event for another.

Another goal of the present study was to investigate the growth reported for events that were manipulated to subjectively feel close or distant. Temporal Self-Appraisal Theory (Ross & Wilson, 2002; 2003; Wilson & Ross, 2001) suggests that by derogating past self, the current self will be perceived as having improved when in

actual fact people are downgrading who they used to be. People derogate subjectively

distant past selves because these selves no longer reflect on their current identity,

whereas they tend to flatter subjectively recent past selves who are more likely to reflect

directly on current identity (Wilson & Ross, 2001). In addition, Ross and Wilson (2002)

demonstrated that people perceive greater psychological distance from negative past

events than positive ones, which may help them to reduce the threat of former troubles.

In the present study, the subjective distance of the event was manipulated to feel close

or distant. We speculate that greater growth may be reported for events that feel further

away than events that feel closer, if people tend to retrospectively derogate their former

selves to enhance their post-adversity coping.

Furthermore as previously examined in the first two studies, another purpose of

the present study was to replicate the first two studies and further demonstrate the

importance of assessing both growth and decline and their role in reported well-being.

As mentioned earlier, participants in the third study completed an adapted version of

Baker et al.'s (2008) depreciation items; however, instead of separate scales or item

pairing, growth and decline items remained integrated as the first two studies. As found

in the first two studies, we expected that participants would report experiencing both

growth and decline, and that these experiences can co-occur. Moreover, we expected

that both growth and decline will be better predictors of well-being together than

growth alone.

Method

Participants

One hundred and sixty-two (83 men and 78 women, 1 unknown) Wilfrid Laurier

University undergraduate students ages 18 to 24 ($M = 18.80$, $SD = 1.03$) were recruited to complete a questionnaire package in a lab setting in return for course credit. Participants were randomly assigned to one of two target person conditions (self vs. other event) and one of two time conditions (close vs. distant). Participants were first divided into their target person condition, where they were asked to recall a negative from the past three years that happened either to them or someone else. Then prior to reporting the extent the target person has grown and declined, the event was manipulated to feel close or distant. The subjective distance of the event was manipulated through a timeline with anchors either a) 'Beginning of 2007' to 'Today' (distant condition) OR b) 'Birth' to 'Today' (close condition) (Wilson & Ross, 2003).

As in the first two studies, participants were provided with the opportunity to indicate their honesty throughout the questionnaire. Three participants indicated that they were not accurate or honest when completing the questionnaire, thus they were removed from the study. In addition, 8 other participants were excluded from the study for failing to follow directions (e.g. describing a negative event for the self when in the other condition and vice versa, or not completing timeline correctly). The data of 151 participants (79 men and 71 women, 1 unknown) were analysed for the results of the study.

Measures and Procedure

Participants completed a questionnaire package in the order of the measures described below, first beginning with demographics page where they indicated their gender, age and religious belief.

Negative event elicitation. Similar to the first two studies, participants were asked to recall a negative event from the past 3 years (see Study 1). Participants were randomly assigned to describe an event that happened to them or someone else (self vs. other condition).

Event features. Similar to the first two studies, participants were asked to rate the target's event on a variety of features, which were assessed with single item measures (see Appendix C). The features were again broken down into three types, past, current and temporal features.[16] For past features, participants reported the intensity of the event, valence, importance and how much the event affected the target. Participants also indicated the primary event target (who the event happened to). For the current features, participants indicated the extent that the consequences of the event continue to occur. Also, similar to Study 2, participants were asked to imagine that the event they described had NOT occurred and were asked to indicate the extent they would be willing to change the event and the extent to which, had the event NOT occurred (parallel self), the target would be inferior or superior to their current selves. In addition, participants were asked the extent they would erase the event from their or their acquaintance's life if given the opportunity.

The Centrality of Event Scale (Berntsen & Rubin, 2006). Participants completed a 7-item scale ($\alpha = .92$) assessing the extent their negative event has become central to the target's identity. Participants responded on a Likert scale ranging from 1 (totally disagree) to 5 (totally agree) for items such as, "I feel that this event has become part of my (their) identity" and "This event has permanently changed my (their) life."

---

[16] Participants completed the temporal features (assessed as event features and a manipulation check) after past features and completed the current features after the PTGDI.

All items were combined to create an event centrality mean. Higher scores indicated that the event was more central to the participants' lives.

Timeline manipulation. The subjective distance of the event was manipulated to feel close or distant. It was manipulated through a timeline where participants indicated (with slash through the line) when their event occurred (Wilson & Ross, 2003). Participants in the distant condition where presented with a line diagram to indicate the timing of the event where the anchors of the line were 'Beginning of 2007' to 'Today.' Participants in the close condition were presented with a similar line diagram however the anchors were changed to 'Birth' to 'Today.' This time line leads people to place the event either spatially adjacent to, or spatially removed from the "today" end of the line, typically resulting in a temporary shift in feelings of temporal distance.

Temporal features. As in the first two studies participants were asked to report the target's perceived similarity between their present and past selves as well as the perceived closeness of the event (see Study 1).

Posttraumatic Growth and Decline Inventory (PTGDI; Adapted from Baker et al., 2008). Similar to the first two studies, participants completed a questionnaire[17] that measures both positive and negative consequences of negative events. However in addition participants reported the consequences of their own event or another's event. Instead of using our version of decline items as in previous two studies, in this study, decline items were adapted from the depreciation items that Baker et al. created.[18] As in

---

[17] Two additional items ("I have a greater/poorer sense of my purpose in life") were included in the spiritual change subscale, thus participants completed a total of 44 items.
[18] After examination of decline items and depreciation items, it was found that items were similar, however depreciation item were more parallel with growth items. However, the wording of a depreciation item was adjusted to enhance clarity of item.

Study 1 and 2, participants responded on a scale of 1 (no change) to 6 (very great degree of change) and items were calculated into a growth mean and decline mean as well as a difference score (see Appendix C for items). As in the first two studies, participants were also provided with the N/A option, specifically for those without religious/spiritual beliefs.[19] The reliability of growth and decline items ($\alpha = .92$, $\alpha = .93$ respectively) were good. The reliability of the growth items for each factor was good (relating to others, $\alpha = .87$, new possibilities, $\alpha = .81$, personal strength, $\alpha = .75$, spiritual change, $\alpha = .73$, and appreciation of life, $\alpha = .79$) and the reliability of the decline items for each factor was also good (relating to others, $\alpha = .85$, new possibilities, $\alpha = .77$, personal strength, $\alpha = .76$, spiritual change, $\alpha = .81$, and appreciation of life, $\alpha = .70$). When examining reliability by self vs. other condition, both growth and decline means and factors continue to have good reliability (see Table 25).

Well-being measures. Although participants were randomly assigned to describe events that happened to the self or another, participants reported on their own well-being for the measures that remain below.

Rosenberg Self-Esteem Scale (Rosenberg, 1965). As in Study 1 and 2, participants completed the 10-item scale ($\alpha = .87$) assessing their self-esteem (see Study 1).

Satisfaction with Life Scale (Diener et al., 1985). As in Study 1 and 2, participants completed a 5 item questionnaire ($\alpha = .83$) assessing their present satisfaction with life (see Study 1).

---

[19] The proportion of participants who selected N/A ranged from 0 to 15% with the majority (5-15%) selecting the option for the religious/spiritual items.

PANAS (Adapted from Watson et al., 1988). Similarly to Study 2, participants completed an 18 item questionnaire (positive affect α = .90, negative affect α = .87) which assesses their present mood in the study (see Study 2).

At the end of the study, participants described a positive event from the past two years as a mood booster to counteract any potential negative emotions that might have arisen during the completion of the study. Finally, participants were asked to indicate if they had answered the questionnaire package honestly and accurately without penalty and were debriefed.

Results and Discussion

The results of the third study are divided into four sections. The first section discusses the effects of the manipulations on the participants. Next, as in the first two studies, the second section discusses the relation between growth and decline, followed by the discussion of whether the amount of growth and decline reported is significant. In the third section, the relation of growth and decline to well-being is discussed. Lastly, the fourth section discusses the relation of both consequences to features of the negative event (past, present and temporal) participants described. The sections discuss the results in two ways. First, the results will be presented with the overall sample. Then, because the experience of an event for the self is conceptually different than the experience of an event that happened to another individual, the results are also presented by self/other condition. However, when breaking down the results concerning the relation of growth and decline with well-being, the other condition will not be included. Participants, regardless of condition, reported well-being for the self, thus it

does not make sense conceptually to indicate how another person's event is related to the well-being of the participants.

Effects of the manipulations

Manipulation check.[20] Participants were divided in one of four conditions. Participants were first asked to recall an event that happened to the self or someone else (self/other condition) then the subjective temporal distance of the event was manipulated to feel close or distant (close/distant condition). Means and standard deviations by conditions are provided in Table 26.

First to examine if participants followed instructions for the close/distant condition manipulation we examined where participants placed a line on a timeline assessing perceived closeness of target's event. To assess this, a 2 time (close vs. distant) X 2 target (self vs. other) ANOVA was conducted. There was a significant main effect of time ($p < .001$) such that participants in the close condition placed their line closer spatially to the anchor "Today" indicating that the event was closer while participants in the distant condition placed their line spatially further from the anchor "Today." There was no main effect of target or interaction of time and target.

Subsequently, a manipulation check of subjective distance was conducted. After the subjective distance of the event was manipulated, participants were asked to indicate on two items (by placing a slash through the line) how subjectively close the event feels.[21] These items were then created into a subjective distance mean ($\alpha = .85$, $r = .75$). A 2 time (close vs. distant) X 2 target (self vs. other) ANOVA revealed no main effects

---

[20] Each analysis in this section examining subjective temporal distance controlled for actual time.
[21] Subjective distance items anchors were "feels very close" to "feels very distant" and "feels like yesterday" to "feels like a long time ago."

of time or target and no significant interaction of time and target, indicating that there

was no significant effect of the manipulation (see Table 26). It is not clear why the

manipulation did not work, however an examination of the means suggests that the

effect was in the right direction for self, and that the manipulation was completely

ineffective for other. It could be that people were not as engaged in the task in the other

condition, or that their perception of time is less readily shifted when thinking more

objectively about events for which they are uninvolved.

Did participants report differences across conditions? Despite an unsuccessful

manipulation check, an examination of condition effects was conducted on the other

study variables (Table 26). No time main effects or target X time interactions emerged.

Some self/other differences were detected, and Table 27 presents the means broken

down by self-other only highlighting the significant comparisons. Participants reported

that the events nominated for other people were more central to the other's identity,

more intense, had more impact, had more affect, and resulted in more continued

consequences. Also, although it was expected that participants would report more

growth and decline for the self, no significant differences were found (although more

growth (marginally) was reported for others). It is possible that participants simply

over-rate the importance of other events (or underestimate the impact of their own)

because of the difference in self-threat. However it is also possible that, because people

were allowed to select an event that occurred to any acquaintance, they had a wider

range of events to choose from and tended to select events that really were higher in

severity.

Because the time manipulation did not have a significant effect, the close/distant condition will be collapsed across the results of the current study. Furthermore, although in many analyses, the self/other condition was also not significant, this condition will not be collapsed as the experience of an event that happened to the self vs. another is conceptually different. The results of the overall sample will be presented first followed by a breakdown by self versus other.

Relation between growth and decline

As in the first two studies, we examined the relation between growth and decline. As shown in Table 28, growth and decline were unrelated, once again demonstrating that these constructs are independent. Furthermore, when we examined the percentage of participants who reported the experience of both growth and decline we found that 48% reported the experience of both. It is clear that growth and decline are independent constructs, when people report greater growth it does not mean there is less decline.

When the sample was broken down into the self/other condition growth and decline were also unrelated (see Tables 29 and 30). Moreover, 42% of participants in the self condition reported both growth and decline whereas 54% of participants reported in the other condition reported both. Although the relation between growth and decline was not significant, it is interesting to note they appear to trend in opposing directions (the self other condition in the positive direction, $r = .18, p = .11$; while the other condition, in the negative direction, $r = -.18, p = .13$). Unlike the experience of a negative event for the self where people can report both high growth and high decline, people may have a mild theory that regarding others' experiences, greater growth is

indication of less decline and vice versa. It may be more difficult for people to fathom

the experience of both in others as they may only observe one of consequences in a

situation. For people's own experiences they are internally aware of the experience of

both even if they only express one of the consequences in a situation.

Are the amounts of growth and decline significant? Similar to the first two

studies, we examined if the amount of growth and decline participants reported were

significantly greater than the value indicating "no growth" or "no decline." The means

of growth and decline from the overall sample were compared to a value of 1 (no

change) while the growth and decline difference scores were compared against a value

of 0 (no change or equal amounts of growth and decline). It was found that participant

reported a significant amount of both growth and decline for the overall means and all

factors (see Table 31). In addition, the growth and decline difference score means

revealed that participants also report greater growth relative to decline. Furthermore,

when examining the percent of participants that reported some growth and some decline

(assessed separately), 95% of participants reported at least some growth while 49%

reported some degree of decline (see Table 32). When examining the growth and

decline difference score, it was found that 67% of participants reported greater growth

than decline and 10% reported more decline than growth. When broken down by the

amount of growth and decline reported by self/other condition, we found that regardless

of condition participants reported significant amounts of both growth and decline and

significantly more growth relative to decline (see Table 33) and a greater percentage of

participants reported more growth (see Table 34).

Role of growth and decline in well-being

The results of the following section will be divided into two subsections. First, the relation of growth and decline with well-being will be discussed, followed by how growth and decline interact to predict well-being. In the second subsection, the general measure of well-being (positive outcome composite) will be discussed first followed by the independent measures of well-being. As mentioned earlier, this section will only report on the self condition as conceptually it makes sense to only report the self condition because regardless of condition participants reported on their own well-being.

Relation of growth and decline with well-being. As both studies have demonstrated that growth and decline together tell a more encompassing story of their relation to well-being than alone, our goal was to replicate the first two studies and further demonstrate the importance of measuring both growth and decline. First, we examined the relation of growth alone to well-being. Similar to the first two studies, greater growth was associated with greater positive affect and was not predictive of the other measures of well-being (see Table 35). When controlling for decline in a series of partial correlations, the relation between growth and positive affect remained and growth was still not predictive of other well-being measures.

In addition to examining the relation of growth alone to well-being we also examined the relation of decline alone and the growth and decline difference score with well-being. As shown in Table 36, decline alone was consistently related to each of the well-being measures (with the exception of positive affect) such that greater reported decline was associated with lower well-being. In addition, similar to Studies 1 and 2, when examining the growth and decline difference score, it was also consistently

related to well-being. Specifically, greater reported growth relative to decline was related to higher reported well-being.

How growth and decline interact to predict well-being. Similar to the first two studies, our goal was to examine how growth and decline together and their interaction predicted well-being. In addition to the independent measures of well-being, we created a positive outcome composite score where independent well-being measures were combined together (negative affect items were first recoded to reflect a positive direction; $\alpha = .76$).[22] We conducted five hierarchical regressions with measures of well-being (life satisfaction, positive and negative affect, and self esteem and the positive outcome composite) entered as dependent variables. In the first step, growth and decline were entered together and the interaction of growth and decline was entered into the next step. When growth and decline were entered together, the predictive ability of growth appeared to improve slightly (although not significantly) across variables except with negative affect (see Table 37). It seems that once again, as found in the first two studies (although not to the same strength), growth and decline were independently predictive affective outcome, such that growth was predictive of higher positive affect and decline was predictive of higher decline.

Furthermore, growth and decline interacted to predicted greater reported positive outcome such that among those who reported higher decline (1 standard deviation above the mean), greater reported growth was predictive of higher positive outcome, $\beta = .47$, $t(79)= 3.60$, $p = .001$ (see Figure 3). However, when participants reported low decline (1 standard deviation below the mean), greater reported growth was no longer

---

[22] Variables were positively related with correlation ranging from .23 to .61.

predictive of positive outcome, $\beta = -.05$, $t(79) = -.37$, $p = .71$. When examining how the

interaction predicted the independent measures of well-being, the same general pattern

was found, however the interaction did not significantly predict life satisfaction and

positive affect.

The results of the current study clearly demonstrate that both growth and decline

are more informative together than separately. When examining growth alone, growth

was only predictive of greater positive affect. Thus, if growth was only assessed alone,

it may have been interpreted that participants only experienced positive consequences

from negative events and that participants only reported experiencing greater positive

affect. However, when examining both growth and decline we were able to account for

more variance in participants' well-being. Together growth and decline were more

predictive of higher well-being and interacted to predict well-being such that only in

instances of greater decline was greater growth predictive of greater well-being.

Do the features of the event predict growth and decline?

Past features. Similar to the first two studies, we examined the relation of

growth and decline with past features of the event. First we assessed how growth alone

was predicted by past features. As shown in Table 38, past features were generally

predictive of growth (with the exception of valence) such that participants who reported

events to be of higher intensity, importance, more affecting and central to life, also

reported greater growth. When controlling for decline, the relation between growth and

past features remained unchanged. In comparison, decline alone was only related to the

centrality of the event where those who reported high decline also reported that the

event was central (see Table 39). Furthermore, the growth and decline difference score was generally predicted by past features, with the exception of event centrality.

Interestingly, when broken down by self/other condition, by and large past features were not related to growth reported in the self condition. This is broadly similar to Study 1 and 2 findings. However, many past features of the events in the other condition were related to reported growth for the target (see Table 40). In addition when examining at the relation between decline and centrality by condition it was only significant for the self. Furthermore, similar to growth alone, the growth and decline difference score was most predicted by features for the other condition (see Table 41). The results suggest that when participants are reporting an event for another, they may rely on the theory that if an event produces growth and decline it must have been an event that was intense and carry great importance and centrality to the person's life.

Current features. Similar to the first two studies, we examined the relation of current features with growth and decline. In general, there were no relations with overall growth alone or growth controlling for decline and relatively few relations with a couple of subscales (see Table 42). In comparison, when examining decline alone and the growth and decline difference score, more relations with current features emerged (although the majority of the relations for the difference score were with the second and third factors). When examining decline alone, participants who reported continued consequences from the event reported greater decline (see Table 43). Furthermore, for those who reported not feeling the need change the event (marginally) and that they perceived their parallel self as more inferior to who they currently are reported greater growth relative to decline.

As shown in Table 44, when the sample was broken down by self/other condition, the relations with growth (alone or controlling for decline) were relatively similar to the overall sample in the self condition (yet still relatively limited to a couple of subscales of growth). However, in the other condition there were fewer relations with current features. When examining the growth and decline difference score, more relations were found between growth relative to decline and current features in the self condition than for the other condition (see Table 45). Participants reporting growth and decline for their own event may be better able to report the relation to current features as the features address internal thoughts and feelings rather than features that can be exhibited in behaviour.

Temporal features. As done in the first two studies, we investigated the relation of temporal features with growth and decline. In general there were relatively few relations with growth and growth controlling for decline with temporal features (see Table 46). Participants who reported greater growth (alone or controlling for decline) also reported less overlap with their past self. In comparison, when examining the growth and decline difference scores and decline alone there were no relations to temporal features found (see Table 47). The relation between growth and identity overlap is consistent with the theory of shattered assumptions. When people experience negative events that is challenging enough, their assumptions of the world are shattered. After a negative experience people have to rebuild their assumptions of the world and in turn this building process facilitates growth and change in the individual (Janoff-Bulman, 1992; Tedeschi & Calhoun, 2004). Participants who perceive growth from

their event may also perceive less similarity to who they used to be because of the

changes they may have gone through in the process.

When broken down by self/other condition, more relations were found between

temporal features and growth for the self than the other condition (see Table 48).

Furthermore, although in general there were no relations between the growth and

decline difference scores and temporal features, when broken down by self/other

condition, the relations between the difference scores and temporal features emerged

(see Table 49). In specific, participants who reported greater growth for the self (growth

alone, growth controlling for decline or the growth and decline difference score) also

reported greater distance from the event (actual and subjective time). There were no

relations between decline and temporal features. Similar to the current features,

temporal features may be more subjective and the degree of how close or distant the

event feels or how much identity overlap exits may not be observed in others, thus there

were fewer relations between temporal features and growth in the other condition.

General Discussion

The purpose of the present research was to demonstrate the importance of

assessing both growth and decline reported from negative events and their contribution

to well-being. Although growth is important in understanding how people respond to

negative events, it is essential to examine both growth and decline. Baker et al. (2008)

questioned the necessity of including decline items, as mean scores were much lower

than those for growth. Our results clearly show that even though mean levels of decline

were lower than levels of growth, assessing both contributes significantly to our

understanding of such events as they predict outcome variables differently when

assessed together. Growth and decline together better predicted well-being than growth alone (in all studies). In addition, growth and decline also were independently predictive of affective outcome (positive and negative affect). Although, growth and decline were also independently predictive of outcome, had they been assessed alone only part of the story would be known. In addition, the interaction of growth and decline was also a relatively consistent predictor of well being. In all three studies, growth and decline interacted to predict higher well-being across a number of measures. The pattern consistently indicated that in the presence of high decline, greater reported growth was related to better well-being (life satisfaction – Study 1; positive outcome – Studies 2 and 3). Among those who reported low decline, growth was no longer predictive of well-being.

The replication of this pattern throughout all of the studies strengthens our confidence in these findings, however, we still interpret the pattern of findings cautiously. First, we are careful to acknowledge that we cannot distinguish between actual growth and perceived growth in these studies. Arguably, the interaction between growth and decline, whether real or perceived, may contribute meaningfully to well-being. However, it is also possible that at least part of our findings have a reverse causal direction: That high well-being contributes to a greater perception of growth in situations of high decline. It is entirely possible that both processes are at play.

It seems that contrary to the idea that experiencing negative consequences from adverse events only results in suffering, when the decline experienced is high enough, it contributes to the relation between growth and well-being. This is consistent with the idea that struggle promotes growth however, the struggle must be great enough that it

shatters someone's assumptions of the world (Janoff-Bulman, 1992; Tedeschi &

Calhoun, 2004). It is when the challenge is great that an individual needs to pick up the

shattered pieces and begin the rebuilding process. Although the data is consistent with

the idea of shattered assumptions, one may interpret the results differently. Another way

to think of the pattern is that growth moderates the relation between decline and well-

being by buffering the effects of decline. High perceived growth may make the decline

experienced manageable and the process of dealing with the experience easier. It would

appear that regardless of interpretation, the balance is important; when an event is

challenging and both consequences are high, are they related to better well-being, if

both growth and decline are not present, then the link to well being is eliminated.

Although Tedeschi and Calhoun acknowledge the presence of negative

consequences when dealing with a traumatic experience, they have not assessed

negative consequence alongside the positive until recently. It is evident from our

research that to gather a greater understanding of people's experience of negative

events, it is worthwhile to assess both growth and decline as both together are more

meaningful than alone. It is important to assess both types of consequences as it is

beneficial to the theory of posttraumatic growth and understanding how people adjust to

such experiences.

In addition to growth and decline together providing more meaningful

information of their relation to well-being, it was found in general that the features of

the event were predictive of growth and decline (with the exception of Study 1 past

features). For example, in Study 2, participants who currently felt their event was

completed were more likely to also report they experienced greater growth (on the

growth-decline difference score). However this relation was no longer apparent when growth was assessed alone. It is evident that assessing both growth and decline is more informative (for both well-being and event features) than assessing these constructs separately. When breaking down sample down by condition in Study 3, past features were more predictive of growth and decline for the other condition, while current and temporal feature were more predictive in the self condition. It may be that the past features are more visible to others through behaviour, while current and temporal features are more internalized only leaving it possible for that person to be aware of them.

By and large, the results support the notion that assessing both growth and decline are more informative whether its regarding people's reported well-being or the features of the event than either alone. The results of the present study validate Wortman's (2004) argument that taking negative consequences into consideration is just as important as considering the positive consequences. She further stated that *not* measuring decline may misrepresent the true degree of growth people report experiencing relative to their other reactions to adversities.

To demonstrate that assessing growth alone results in loss of information, we investigated the amount of decline that the PTGI failed to capture and found that there were a considerable percentage of participants who reported decline (Study 1- 32%, Study 2- 51% and Study 3 - 49%). When assessing growth relative to decline, up to 16% of participants (Study 2) reported more decline than growth. For these participants, the amount of growth they experienced (if any) was exceeded by the amount of decline reported. These people's experience would be importantly misrepresented by a measure

that captures only growth. Similarly, although it appears that a vast majority of respondents (90%) experience growth following adversity when assessed on the PTGI alone, only 49% to 67% of participants reported more growth than decline (all studies). This however does not mean that the perception of growth differs when people complete the PTGI only versus the PTGDI. When assessing growth alone in each condition we found that they did not significantly differ. What is important to note is that the addition of decline allows participants to report a fuller range of what they have experienced. Because the PTGI asks only about growth, participants do not have the opportunity to report the decline they experience, thus that information would be lost.

To further attest to the importance of assessing *both* growth and decline, other researchers have taken the approach of assessing both consequences on a continuum (e.g. Armeli et al., 2001) and on separate dimensions (e.g. Baker et al., 2008). The present research assessed both growth and decline on a continuum and on separate dimensions. In Study 1, when participants reported growth and decline as separate constructs it was consistently predictive of well being, however when growth and decline were treated as one construct (continuum measure) only the relation to life satisfaction remained. Our results support Baker et al.'s (2008) argument that assessing growth and decline on a continuum resulted in a loss of information as the continuum score was not consistently predictive of well-being, thus it is important to assess both constructs independently.

When focusing specifically on the relation between growth and decline, Study 1 found that there was a positive relation between growth and decline, where individuals who reported high growth were more likely to report higher decline as well, suggesting

that people experience both growth and decline. Furthermore, in the second and third study, we found that growth and decline were not significantly related. The lack of a negative relation between growth and decline (across all studies) is consistent with what Baker et al. (2008) found with their construct of depreciation and Joseph et al. (1993) found in their assessment of positive and negative changes in outlook. Also consistent with Baker et al. (2008), in the present study, many participants reported experiencing *both* growth and decline (29% in Study 1, 47% in Study 2, and 48% in Study 3[23]). Baker et al. found that 27% of participants reported experiencing both growth and depreciation. From the findings of the current research as well as previous research it is evident that growth and decline are independent constructs.

One might inquire how it may be possible to experience both growth and decline and whether they are experienced concurrently. The current research, however, cannot speak to this matter as the research was conducted retrospectively. However, there are a few reasons, regarding the current research, why participants may have reported both growth and decline. First, it has been found in previous research (e.g. Tedeschi and Calhoun, 1996) that the PTGI has five domains and within each of those domains addresses different aspects. It is possible that growth and decline are multifaceted, thus participants are able to search through different aspects of their lives and assess whether they have grown and/or decline. For instance, when addressing the domain of 'relating to others' and how people experience both growth and decline, if we look specifically at the items "I put more effort into my relationships" (growth) and "I put less effort into my relationships" (decline), it is possible that an individual may put more effort in some

---

[23] When broken down by self and other, 42% reported both growth and decline in the self condition and 54% reported both in the other condition.

relationships (e.g. family, friends etc.) and not in others (e.g. co-workers, peers).

However with that being said, it brings us to our second point, within the current

research not all items were exactly parallel. The problem of the items not being

completely parallel makes it more possible for people to experience both growth and

decline. For example, in Study 1 "I discovered that I'm stronger than I thought I was"

(growth) and "My capacity to cope with difficulties has deteriorated" (decline) are not

parallel items. It is possible for someone to feel they are stronger, yet still have

difficulties with coping, thus to address this problem, the decline item was adjusted to "I

have come to realize that I'm not as strong as I thought I was" to be more parallel.

Notably, by Study 3, items were quite parallel, yet very similar proportions of growth

and decline were found regardless of item wording across studies.

Finally, it is also possible that participants were able to report both growth and

decline because the study was retrospective. In other words, participants might have

experienced both growth and decline but at different times. They may have experienced

decline first followed by growth or vice versa, giving them the ability to report the

experience of both. The former temporal course would be consistent with what

Tedeschi and Calhoun have argued regarding the process of growth where one must be

challenging enough for growth to occur. Future research could disentangle the temporal

dimension of the PTGDI to further understand the dynamics of these two experiences.

Notably, although Tedeschi and Calhoun argue that growth is specific to

traumatic events, the present research assessed negative events on a continuum and

found that participants reported growth from a variety of events, such as academic and

relationship problems to sexual assault and death of loved ones. Previous research (e.g.

Park et al., 1996; Park & Fenster, 2004) have also found participants reported growth from less traumatic events such as academic problems and moving away to college to more traumatic events such as accidents and death. It appears, then, that similar effects can be seen along a continuum of adverse events rather than only for traumatic ones.

In addition to examining negative events on a continuum, the current research (Study 3) also examined the perceptions of growth and decline in the self vs. in another. In general, many of the patterns found overall were replicated when broken down by self/other condition. Notably, there were also some interesting differences that arise across conditions as well. For example, it is interesting to note that although the features were generally predictive of growth and decline when broken down by self/other condition, past features were more predictive of growth and decline for others and current and temporal features were more predictive of the growth and decline reported for the self. This may suggest that people have a theory about what promotes growth and decline from events. They may think that if an event facilitated greater growth it must have been challenging and highly intense for the person that experienced it. Also, as mentioned earlier, another thing that may have contributed to greater relations of the past features to growth and decline may have been the features themselves. In comparison to the current and temporal features, it may be clearer when past features are present to an outside observer by the target's behaviour.

Although the present research has provided a greater understanding of the significance of assessing *both growth and decline*, it is important to note that some of the present findings were unexpected and unclear. It was interesting to find that the fourth factor (spiritual change) was not as consistently related to other variables as the

other growth factors. A possible explanation for this may be that participants tend to

vary in religious/spiritual beliefs and some participants may have found the items not

applicable if they were atheist or agnostic. For example, the items "I have a better

understanding of spiritual matters" and "I have a stronger religious faith" are not

relevant to individuals of agnostic or atheist beliefs. Tedeschi and Calhoun (2004)

however, argued otherwise. They argued that this factor is not at all restrictive of such

individuals, as they may grow from the event in this way through questioning their

existence. Although they assert the relevance of this factor to those without such beliefs,

it is clear that the wording of the items ("spiritual matters" and "religious faith") would

prevent non religious or spiritual individuals from expressing change experienced in

this domain.

Furthermore, in Study 1, we found that past features were more strongly related

to the continuum score (growth and decline assessed on one dimension) and unrelated

to the difference score (growth in relation to decline). The present research has

repeatedly found that the growth and decline difference score was more informative

than assessing growth and decline separately or on a continuum. Thus it is not clear

why, in the case of past features, they were most predictive of the continuum scores.

In addition to the unexpected results, the present study has some limitations.

When interpreting the results of the present study it is important to be aware of the

sample that was studied. The results of studies using university student participants may

not be generalizable to a more diverse community sample. Individuals in the

community may be more likely to have a greater range of life experiences, thus may be

more likely to have experienced greater adversity in their lifetime. On the other hand

because individuals in a university sample are much younger (approximately 18 to 25 years), there is less chance that they have experienced severe adverse events. In the present study, participants were most likely to report events such as relationship or academic problems or loss of loved ones, which are typical life events. A community sample tends to have greater variability with reference to age, thus the sample would consist of older individuals with more life experience. Furthermore, a community sample would have more variability with reference to other demographics such as socioeconomic status, ethnicity, education etc., thus the results of the present study would be most applicable to a university sample. This is not to say that the present findings are not generalizable to other samples, but to merely note that if generalizing to other samples to do so with caution.

Furthermore, because the data of the present study was collected in single time frame and relied greatly on retrospective memory, we cannot accurately assess whether greater growth leads to increased well-being or if individuals with increased well-being report greater growth. A potential solution to this limitation, although not always feasible, is to assess participants' pre and post trauma. A baseline assessment and post assessment of participants' posttraumatic growth and decline as well as at the moment of the event would provide a greater understanding of negative events. Longitudinal studies would provide better insight into the antecedents and outcomes of the experience of growth (Helgeson et al., 2006). However it is important to stress that although results from longitudinal studies would be more informative, they still may not provide causal evidence. Also, in the case of sensitive topics such as negative events, it is necessary to be aware of ethical problems that may arise.

Lastly, in Study 3, we did not assess relationship closeness for participants describing another person's event. It is reasonable to suspect that the relationship closeness would impact the relation between the growth and decline reported for another. For example, if a participant described an event that happened to a family member, odds are that the participant would possess more knowledge about a family member's growth or decline following an event because of the closeness that family members tend to share. Furthermore, it is possible that selection bias occurred for participants in the other condition as they were able to select from a variety of people in their lives and may have selected the person best suited for the study. In other words, participants may have selected another person who they know has experienced a negative event, in turn biasing the results from that condition. In future research, it would be important to gather more information about participants' closeness to the other and the degree to which they were personally affected by the adverse event. In addition, it would be wise for future research to ask participants to nominate another person and then select an event from that person's life.

Although the present study includes caveats, the study does address one of the main criticisms of posttraumatic growth: the sole focus on positive consequences of negative events. In addition to the aforementioned criticism, the third study contributes to our understanding of growth and decline reported from a negative event that happened to the self or to another person. However, there are other criticisms which the current study has not addressed. For example, there is uncertainty as to whether negative events are the only situations where growth can occur. It is argued that negative events are not necessary for growth, and that it is possible that positive events

can facilitate growth. (Aldwin & Levenson, 2004; Campbell, Brunell, & Foster, 2004;

Park et al., 1996). Park et al. (1996) investigated predictors of growth and found that

positive events were a strong predictor of reports of growth. Tedeschi and Calhoun

(2004) acknowledge that positive experiences may also be related to growth, especially

extraordinary events, however, the event needs to be important and challenging enough

to facilitate growth. It may be interesting for future research to compare the growth and

decline participants report for positive and negative events as it possible that negative

consequences may arise from positive experiences (Brown & McGill, 1989).

Although the present study was unable to address other criticisms in the

literature of posttraumatic growth, the results of the present study advance the literature

on traumatic experiences by contributing to a more complex understanding of the

balance between how people may experience benefits from adversity while still

experiencing its negative effects. Continued research on this matter will help to account

for how memories of life events, in particular adverse or traumatic experiences,

become part of one's identity and may be applicable for future use in intervention

therapy. It is important for clinicians take both consequences into consideration, not to

ignore either, as both can provide valuable insight into understanding the role negative

events play in someone's well-being, their identity, and current experience.

Appendices

Appendix A: Study 1 Questionnaire

Appendix B: Study 2 Questionnaire

Appendix C: Study 3 Questionnaire

Appendices

Appendix A. Study 1 Questionnaire

Demographics

Age: _____   Gender: _____

Do you have any religious or spiritual beliefs?

    Yes   ☐

    No   ☐

Were religious or spiritual beliefs an important part of growing up?

    Yes   ☐

    No   ☐

What is your religious or spiritual belief (if any)? _____

SECTION A

To help us understand your experiences a bit better, please complete the following personality and attitude questionnaires.

Rosenberg Self Esteem Scale

Please read the following statements below and select the best response for each.

1	2	3	4	5	6	7	8	9
strongly disagree		somewhat disagree		neither agree nor disagree		somewhat agree		strongly agree

1. ___ On the whole I am satisfied with myself.

2. ___ At times I think I am no good at all.

3. ___ I feel that I have a number of good qualities.

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 certainly feel useless at times.

7. ___ I feel that I'm a person of worth, at least on an equal plane with others.

8. ___ I wish I could have more respect for myself.

9. ___ All in all I am inclined to feel that I am a failure.

10. ___ I take a positive attitude toward myself.

SECTION B

Negative Event Elicitation & Past Features of Event

Please take some time to think about a negative event that happened within the last **three** years that had an impact on your life. The experience could have involved others but what is important is that it had a **direct impact on you** and your sense of well being.

Please think about the specific negative event and describe it briefly below.

_____

_____

_____

_____

_____

_____

_____

_____

Please estimate, as best as you can, the actual date of this negative experience:

_____/_____
Month / Year

Please answer some questions about the negative experience you just described by circling the appropriate number on the scale.

How severe was the event for you at the time?

1	2	3	4	5	6	7
Not at all						Very Severe

How positive was this event for you at the time?

1	2	3	4	5	6	7
Not at all						Very Positive

How negative was this event for you <u>at the time</u>?

1	2	3	4	5	6	7

Not at all   Very Negative

How personally important was this negative event to your life <u>at the time</u>?

1	2	3	4	5	6	7

Not at all important   Very important

How much did this negative event bother you <u>at the time?</u>

1	2	3	4	5	6	7

Not at all   Very much
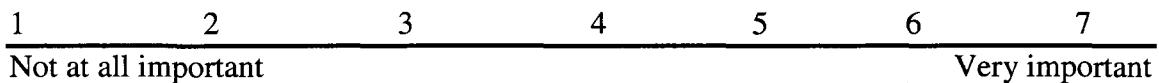
To what degree was this event caused by:

Yourself

1	2	3	4	5	6	7

Not at all   Very much

Someone Else

1	2	3	4	5	6	7

Not at all   Very much
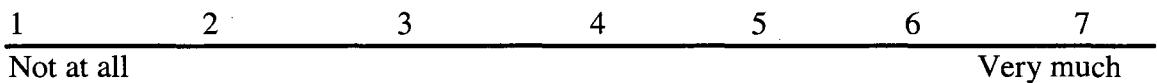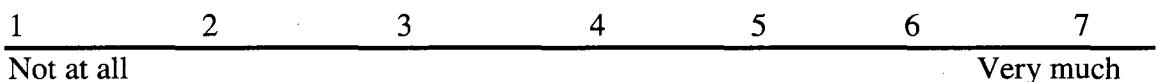
External Circumstances/The Situation

1	2	3	4	5	6	7

Not at all   Very much

Bad Luck

1	2	3	4	5	6	7

Not at all   Very much

Temporal Selves

The figures below represent "the self" as a circle. Think of the circle below as representing your Current Self. This circle includes everything about your current personality, your attitudes, values, likes and dislikes. Think of this circle as encompassing everything that you personally feel is part of **Your Current Self** - in other words, everything that you consider important for defining who you are as a person now, at your current age.

Current Self

Next, think of the circle representing your Past Self as the person you were around the time of the negative event you described. This circle includes everything about your past personality, your attitudes, values, likes and dislikes from that time. Think of this circle as encompassing everything that you personally felt was part of **your past self before the negative event (that you described earlier) occurred** - in other words, everything that you considered important for defining who you were as a person then, before the time of this recalled experience.

Past Self

Please circle the picture below which best describes how close you currently feel to your past self. In other words, how much overlap is there between who you are now and who you were **before the negative event you described**?

1. Current Self   Past Self
2. Current Self   Past Self
3. Current Self   Past Self
4. Current Self   Past Self
5. Current Self   Past Self
6. Current Self   Past Self
7. Current Self   Past Self

Temporal Distance

Sometimes events tend to *feel* closer or further away, regardless of how long ago it actually occurred. Think about the **negative event** that you described earlier in the study. Place a mark through the lines below at the points that best indicate how far away that event *feels* to you now.

Feels very close   Feels very distant

_____

Feels like yesterday   Feels like a long time ago

_____

Current Features of Event

Please answer some questions about the negative experience you just described by circling the appropriate number on the scale.

To what extent can you avoid a similar type of negative event in the future?

1	2	3	4	5	6	7

I cannot   I can
avoid it   avoid it
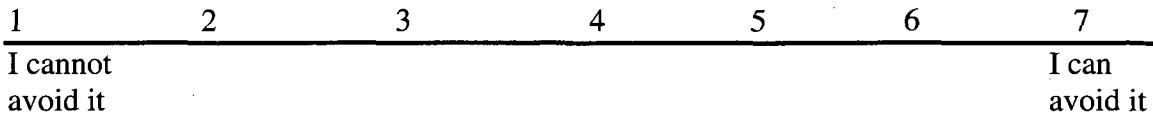
How likely is it that you will encounter similar negative events in the future?

1	2	3	4	5	6	7

Not at all   Very likely

To what degree does this negative event feel "over and done with"?

1	2	3	4	5	6	7
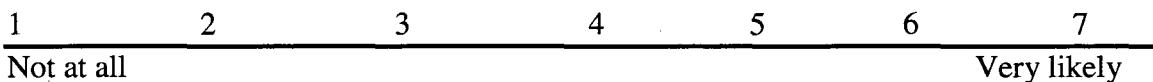
Not at all   Very much
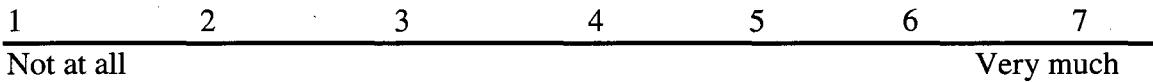
To what extent are you still experiencing consequences caused by this negative event?

1	2	3	4	5	6	7

Not at all   Very much
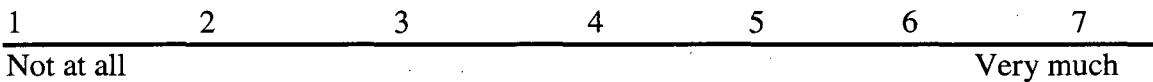
Are the consequences of this negative event primarily good, primarily bad or equally good and bad?

1	2	3	4	5	6	7

Primarily bad   Equally good and bad   Primarily Good
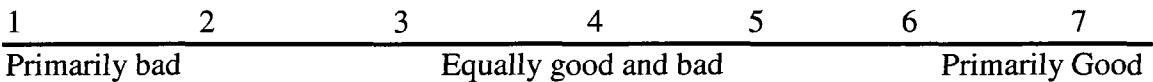
PTGDI (Continuum Measure)

*Indicate for each of the statements below the extent to which this change occurred in your life **as a result of your negative event**, using the following scale.*

	Gotten a Lot Worse				Stayed Same					Improved a Lot		N/A
1) My priorities about what is important in life has…	1	2	3	4	5	6	7	8	9	10	11	N/A
2) An appreciation for the value of my own life has…	1	2	3	4	5	6	7	8	9	10	11	N/A
3) My appreciation for each day has…	1	2	3	4	5	6	7	8	9	10	11	N/A
4) My feeling of self-reliance has…	1	2	3	4	5	6	7	8	9	10	11	N/A
5) My ability to handle difficulties has…	1	2	3	4	5	6	7	8	9	10	11	N/A
6) My ability to accept the way things work out has…	1	2	3	4	5	6	7	8	9	10	11	N/A
7) Knowing I can count on people in times of trouble has…	1	2	3	4	5	6	7	8	9	10	11	N/A
8) My sense of closeness with others has…	1	2	3	4	5	6	7	8	9	10	11	N/A
9) My willingness to express my emotions has…	1	2	3	4	5	6	7	8	9	10	11	N/A
10) My compassion for others has…	1	2	3	4	5	6	7	8	9	10	11	N/A
11) The effort I put into my relationships has…	1	2	3	4	5	6	7	8	9	10	11	N/A

PTGDI (Separate Growth and Decline Items)

*Indicate for each of the statements below the degree to which this change occurred in your life **as a result of your negative event**, using the following scale*

As a result of the negative event...	Not at All	Very Small Degree	Small Degree	Moderate Degree	Great Degree	Very Great Degree	N/A
1) I am more confused about spiritual matters.	1	2	3	4	5	6	N/A
2) I have lost interest in the things I used to enjoy.	1	2	3	4	5	6	N/A
3) I have more trouble asking for help when needed.	1	2	3	4	5	6	N/A
4) My life's path has taken a turn for the worse.	1	2	3	4	5	6	N/A
5) My capacity to cope with difficulties has deteriorated.	1	2	3	4	5	6	N/A
6) I discovered that I'm stronger than I thought I was.	1	2	3	4	5	6	N/A
7) I developed new interests.	1	2	3	4	5	6	N/A
8) My religious faith has weakened.	1	2	3	4	5	6	N/A
9) I established a new path for my life.	1	2	3	4	5	6	N/A
10) I have a stronger religious faith.	1	2	3	4	5	6	N/A
11) I'm able to do better things in my life.	1	2	3	4	5	6	N/A
12) I feel like I keep making mistakes.	1	2	3	4	5	6	N/A
13) Many opportunities have been closed to me.	1	2	3	4	5	6	N/A
14) I'm more likely to try and change things which need changing.	1	2	3	4	5	6	N/A
15) I learned a great deal about how wonderful people are.	1	2	3	4	5	6	N/A
16) I have a better understanding of spiritual matters.	1	2	3	4	5	6	N/A
17) New opportunities are available which wouldn't have been otherwise.	1	2	3	4	5	6	N/A

As a result of the negative event...	Not at All	Very Small Degree	Small Degree	Moderate Degree	Great Degree	Very Great Degree	N/A
18) I am more able to accept needing others.	1	2	3	4	5	6	N/A
19) I'm less inclined to make changes in my life.	1	2	3	4	5	6	N/A
20) I have found that others keep disappointing me.	1	2	3	4	5	6	N/A

Satisfaction with Life Scale

Below are five statements that you may agree or disagree with. Using the 1 - 7 scale below indicate your agreement with each item by placing the appropriate number on the line preceding that item. Please be open and honest in your responding.

7 - Strongly agree
6 - Agree
5 - Slightly agree
4 - Neither agree nor disagree
3 - Slightly disagree
2 - Disagree
1 - Strongly disagree

_____ In most ways my life is close to my ideal.

_____ The conditions of my life are excellent.

_____ I am satisfied with my life.

_____ So far I have gotten the important things I want in life.

_____ If I could live my life over, I would change almost nothing.

The PANAS Scale

This scale consists of a number of words that describe different feelings and emotions. Read each item and then mark the appropriate answer in the space next to that word. Indicate to what extent you feel this way right now, that is, at the present moment. Use the following scale to record your answers.

1	2	3	4	5
very slightly/ or not at all	a little	moderately	quite a bit	extremely

_____ interested   _____ irritable

_____ distressed   _____ alert

_____ excited   _____ ashamed

_____ upset   _____ inspired

_____ strong   _____ nervous

_____ guilty   _____ determined

_____ scared   _____ attentive

_____ hostile   _____ jittery

_____ enthusiastic   _____ active

_____ proud   _____ afraid

_____ sad   _____ happy

_____ fortunate   _____ anxious

_____ uneasy   _____ glad

_____ joyful   _____ uneasy

_____ tired   _____ thankful

_____ contented   _____ grief

_____ hateful   _____ pleased

_____ satisfied   _____ awful

Mood Booster

Try to think of something <u>very positive</u> that has happened <u>within the past 2 years</u>. This could be one of a variety of events such as an academic, athletic, or interpersonal success. This experience can involve other people but it must have had a <u>direct impact on <i>your self</i></u>. That is, it should have made you feel good about yourself.

Once you have thought of a positive life event, please describe it briefly (in one or two sentences) below.

_____

_____

_____

_____

2. Please estimate, to the best of your ability, the actual date of this positive event:

_____/_____
Month / Year

Sometimes, for a variety of reasons, people do not respond to study questions honestly or accurately. We recognize that this may occur, and it is very helpful to us in understanding our results if we can identify such cases. Please help us by answering the question below about how you responded to the questionnaire. You still receive full credit for participation in this study regardless of your response.

➢ Have you responded to this questionnaire package accurately and honestly?

_____Yes   _____No

Appendix B. Study 2 Questionnaire

Demographics

Age: _____   Gender: _____

Do you have any religious or spiritual beliefs?

    Yes   ☐

    No   ☐

Were religious or spiritual beliefs an important part of growing up?

    Yes   ☐

    No   ☐

What is your religious or spiritual belief (if any)? _____

How important are your religious or spiritual beliefs (if any) in your life?

Not at All	Somewhat	Moderately	Reasonably	Very Important
1 ☐	2 ☐	3 ☐	4 ☐	5 ☐

SECTION A

To help us understand your experiences a bit better, please complete the following personality and attitude questionnaires.

Rosenberg Self Esteem Scale

For items 1 –10 please use the following scale and put the appropriate letter(s) in the space provided.

1	2	3	4	5	6	7	8	9
strongly disagree		somewhat disagree		neither agree nor disagree		somewhat agree		strongly agree

1. ___ On the whole I am satisfied with myself.

2. ___ At times I think I am no good at all.

3. ___ I feel that I have a number of good qualities.

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 certainly feel useless at times.

7. ___ I feel that I'm a person of worth, at least on an equal plane with others.

8. ___ I wish I could have more respect for myself.

9. ___ All in all I am inclined to feel that I am a failure.

10. ___ I take a positive attitude toward myself.

SECTION B

Negative Event Elicitation & Past Features of the Event

Please take some time to think about a negative event that happened within the last **three** years that had an impact on your life. The experience could have involved other people but what is important is that it had a **direct impact on you** and your sense of well being.

Please think about the specific negative event and describe it briefly below.

_____

_____

_____

_____

_____

_____

Please estimate, as best as you can, the actual date of this negative experience:

_____ / _____
Month / Year

Please answer some questions about the negative experience you just described by circling the appropriate number on the scale.

How severe was the event for you <u>at the time</u>?

1	2	3	4	5	6	7
Not at all						Very Severe

How positive was this event for you <u>at the time</u>?

1	2	3	4	5	6	7
Not at all Positive						Very Positive

How personally important was this negative event to your life <u>at the time</u>?

1	2	3	4	5	6	7
Not at all important						Very important

How much did this negative event bother you <u>at the time?</u>

| 1	2	3	4	5	6	7
Not at all						Very much

Temporal Selves

The figures below represent "the self" as a circle. Think of the circle below as representing your Current Self. This circle includes everything about your current personality, your attitudes, values, likes and dislikes. Think of this circle as encompassing everything that you personally feel is part of **Your Current Self** - in other words, everything that you consider important for defining who you are as a person now, at your current age.

Current Self

Next, think of the circle representing your Past Self as the person you were around the time of the negative event you described. This circle includes everything about your past personality, your attitudes, values, likes and dislikes from that time. Think of this circle as encompassing everything that you personally felt was part of **your past self before the negative event (that you described earlier) occurred** - in other words, everything that you considered important for defining who you were as a person then, before the time of this recalled experience.

Past Self

Please circle the picture below which best describes how close you currently feel to your past self. In other words, how much overlap is there between who you are now and who you were **before the negative event you described**?

1. Current Self   Past Self

2. Current Self   Past Self

3. Current Self   Past Self

4. Current Self   Past Self

5. Current Self   Past Self

6. Current Self   Past Self

7. Current Self   Past Self

Temporal Distance

Sometimes events tend to *feel* closer or further away, regardless of how long ago it actually occurred. Think about the **negative event** that you described earlier in the study. Place a mark through the lines below at the points that best indicate how far away that event *feels* to you now.

Feels very close   Feels very distant

_____

Feels like yesterday   Feels like a long time ago

_____

Posttraumatic Growth and Decline Inventory (PTGDI)

*Indicate for each of the statements below the degree to which this change occurred in your life **as a result of your negative event**, using the following scale.*

	Not at All	Very Small Degree	Small Degree	Moderate Degree	Great Degree	Very Great Degree	N/A
1) I have a better understanding of spiritual matters.	1	2	3	4	5	6	N/A
2) I'm able to do better things in my life.	1	2	3	4	5	6	N/A
3) I can better appreciate each day.	1	2	3	4	5	6	N/A
4) I have a poor sense of priorities of what is important in life.	1	2	3	4	5	6	N/A
5) I put more effort into my relationships.	1	2	3	4	5	6	N/A
6) The appreciation for the value of my own life has decreased.	1	2	3	4	5	6	N/A
7) I feel like I keep making mistakes.	1	2	3	4	5	6	N/A
8) I more clearly see that I can count on people in times of trouble.	1	2	3	4	5	6	N/A
9) I have come to realize that I'm not as strong as I thought I was.	1	2	3	4	5	6	N/A
10) I know better that I can handle difficulties.	1	2	3	4	5	6	N/A
11) I learned a great deal about how wonderful people are.	1	2	3	4	5	6	N/A
12) My ability to be compassionate toward others has decreased.	1	2	3	4	5	6	N/A
13) I feel less able to count on the people in my life during hard times.	1	2	3	4	5	6	N/A
14) I have lost interest in the things I used to enjoy.	1	2	3	4	5	6	N/A

As a result of the negative event...	Not at All	Very Small Degree	Small Degree	Moderate Degree	Great Degree	Very Great Degree	N/A
15) I have a stronger religious faith.	1	2	3	4	5	6	N/A
16) New opportunities are available which wouldn't have been otherwise.	1	2	3	4	5	6	N/A
17) I'm less inclined to make changes in my life.	1	2	3	4	5	6	N/A
18) I have found that others keep disappointing me.	1	2	3	4	5	6	N/A
19) I am better able to accept the way things work out.	1	2	3	4	5	6	N/A
20) I have a greater feeling of self-reliance.	1	2	3	4	5	6	N/A
21) My religious faith has weakened.	1	2	3	4	5	6	N/A
22) I am more willing to express my emotions.	1	2	3	4	5	6	N/A
23) I have a greater sense of closeness with others.	1	2	3	4	5	6	N/A
24) I am more confused about spiritual matters.	1	2	3	4	5	6	N/A
25) I have more trouble asking for help when needed.	1	2	3	4	5	6	N/A
26) I'm more likely to try to change things which need changing.	1	2	3	4	5	6	N/A
27) I discovered that I'm stronger than I thought I was.	1	2	3	4	5	6	N/A
28) I developed new interests.	1	2	3	4	5	6	N/A
29) I find it difficult to accept the way things work out.	1	2	3	4	5	6	N/A
30) I established a new path for my life.	1	2	3	4	5	6	N/A
31) I have more trouble handling difficulties.	1	2	3	4	5	6	N/A

As a result of the negative event...	Not at All	Very Small Degree	Small Degree	Moderate Degree	Great Degree	Very Great Degree	N/A
32) I have a greater appreciation for the value of my own life.	1	2	3	4	5	6	N/A
33) I have more compassion for others.	1	2	3	4	5	6	N/A
34) Many opportunities have been closed to me.	1	2	3	4	5	6	N/A
35) I am more able to accept needing others.	1	2	3	4	5	6	N/A
36) I am more guarded with my emotions.	1	2	3	4	5	6	N/A
37) My life's path has taken a turn for the worse.	1	2	3	4	5	6	N/A
38) I find it difficult to make good connections with others.	1	2	3	4	5	6	N/A
39) I find it hard to appreciate each day.	1	2	3	4	5	6	N/A
40) I feel like I have become less self-reliant.	1	2	3	4	5	6	N/A
41) I have a better sense of priorities about what is important in life.	1	2	3	4	5	6	N/A
42) I find myself putting less effort into my relationships.	1	2	3	4	5	6	N/A

OR
Posttraumatic Growth Inventory (PTGI; ORIGINAL Tedeschi & Calhoun scale)

Indicate for each of the statements below the degree to which this change occurred in your life as a result of your negative event, using the following scale.

	Not at All	Very Small Degree	Small Degree	Moderate Degree	Great Degree	Very Great Degree	N/A
1) I changed my priorities about what is important in life.	1	2	3	4	5	6	N/A
2) I have a greater appreciation for the value of my own life.	1	2	3	4	5	6	N/A
3) I developed new interests.	1	2	3	4	5	6	N/A
4) I have a greater feeling of self-reliance.	1	2	3	4	5	6	N/A
5) I have a better understanding of spiritual matters.	1	2	3	4	5	6	N/A
6) I more clearly see that I can count on people in times of trouble.	1	2	3	4	5	6	N/A
7) I established a new path for my life.	1	2	3	4	5	6	N/A
8) I have a greater sense of closeness with others.	1	2	3	4	5	6	N/A
9) I am more willing to express my emotions.	1	2	3	4	5	6	N/A
10) I know better that I can handle difficulties.	1	2	3	4	5	6	N/A
11) I am able to do better things with my life.	1	2	3	4	5	6	N/A
12) I am better able to accept the way things work out.	1	2	3	4	5	6	N/A
13) I can better appreciate each day.	1	2	3	4	5	6	N/A
14) New opportunities are available which wouldn't have been otherwise.	1	2	3	4	5	6	N/A
15) I have more compassion for others	1	2	3	4	5	6	N/A
16) I put more effort into my relationships	1	2	3	4	5	6	N/A

As a result of the negative event...	Not at All	Not at All	Very Small Degree	Small Degree	Moderate Degree	Great Degree	N/A
17) I am more likely to try to change things which need changing.	1	2	3	4	5	6	N/A
18) I have a stronger religious faith.	1	2	3	4	5	6	N/A
19) I discovered that I'm stronger than I thought I was.	1	2	3	4	5	6	N/A
20) I learned a great deal about how wonderful people are.	1	2	3	4	5	6	N/A
21) I better accept needing others.	1	2	3	4	5	6	N/A

Current Features of Event

Please answer some questions about the negative experience you just described by circling the appropriate number on the scale.

To what extent can you avoid a similar type of negative event in the future?

1	2	3	4	5	6	7

I cannot   I can
avoid it   avoid it

To what degree does this negative event feel "over and done with"?

1	2	3	4	5	6	7

Not at all   Very much

Imagine for a moment what you would be like if this event had <u>not</u> happened. Please indicate the degree to which you would be the same or different as a person had this negative event never occurred.

1	2	3	4	5	6	7

I would be very different   I would be basically   I would be very different
in mostly <u>bad</u> ways   the same   in mostly <u>good</u> ways

If you had the chance to go back and <u>change</u> the negative event (to make it NOT happen), how likely would you be to change it?

1	2	3	4	5	6	7

I would not change it   if I could I would choose for
even if I could   it NOT to have happened

Satisfaction with Life Scale

Below are five statements that you may agree or disagree with. Using the 1 - 7 scale below indicate your agreement with each item by placing the appropriate number on the line preceding that item. Please be open and honest in your responding.

> 7 - Strongly agree
> 6 - Agree
> 5 - Slightly agree
> 4 - Neither agree nor disagree
> 3 - Slightly disagree
> 2 - Disagree
> 1 - Strongly disagree

_____ In most ways my life is close to my ideal.

_____ The conditions of my life are excellent.

_____ I am satisfied with my life.

_____ So far I have gotten the important things I want in life.

_____ If I could live my life over, I would change almost nothing.

Positive and Negative Affect Scale (PANAS)

This scale consists of a number of words that describe different feelings and emotions. Read each item and then mark the appropriate answer in the space next to that word. Indicate to what extent you feel this way right now, that is, at the present moment. Use the following scale to record your answers.

1	2	3	4	5
very slightly/ or not at all	a little	moderately	quite a bit	extremely

_____ distressed   _____ anxious

_____ upset   _____ inspired

_____ strong   _____ nervous

_____ guilty   _____ determined

_____ proud   _____ afraid

_____ sad   _____ happy

_____ fortunate   _____ joyful

_____ ashamed   _____ thankful

_____ contented   _____ weak

Mood Booster

Try to think of something <u>very positive</u> that has happened <u>within the past 2 years</u>. This could be one of a variety of events such as an academic, athletic, or interpersonal success. This experience can involve other people but it must have had a <u>direct impact on *your self*</u>. That is, it should have made you feel good about yourself.

Once you have thought of a positive life event, please describe it briefly (in one or two sentences) below.

_____

_____

_____

_____

2. Please estimate, to the best of your ability, the actual date of this positive event:

_____/_____
Month / Year

Sometimes, for a variety of reasons, people do not respond to study questions honestly or accurately. We recognize that this may occur, and it is very helpful to us in understanding our results if we can identify such cases. Please help us by answering the question below about how you responded to the questionnaire. You still receive full credit for participation in this study regardless of your response.

➢ Have you responded to this questionnaire package accurately and honestly?
   ____Yes   ____No

Appendix C. Study 3 Questionnaire

Self Condition

Demographics

Age: _____   Gender: _____

Do you have any religious or spiritual beliefs?

     Yes   ☐

     No   ☐

Were religious or spiritual beliefs an important part of growing up?

     Yes   ☐

     No   ☐

What is your religious or spiritual belief (if any)? _____

How important are your religious or spiritual beliefs (if any) in your life?

Not at All	Somewhat	Moderately	Reasonably	Very Important
1 ☐	2 ☐	3 ☐	4 ☐	5 ☐

Please take some time to think about a **negative** event that happened within the last **Three** years that had an impact on your life. The experience could have involved other people but what is important is that it had a **direct impact on you** and your sense of well being (it should have made you feel **bad**).

Please think about the specific *negative event* and describe it briefly below.

_____

_____

_____

_____

_____

_____

_____

Please estimate, as best as you can, the actual date of this **negative** experience:

_____ / _____
Month / Year

Please answer some questions about the **negative** experience you just described by circling the appropriate number on the scale.

Who did this event happen to primarily (i.e. did the **negative** event happen to you specifically or to someone else even if it affected you indirectly)?

_____ Self or _____ Someone Else

How intense was the event for you <u>at the time</u>?

1	2	3	4	5	6	7
Not at all						Very Intense

How positive or negative was this event for you <u>at the time</u>?

1	2	3	4	5	6	7
Very Positive						Very Negative

How personally important was this **negative** event to your life <u>at the time</u>?

1	2	3	4	5	6	7
Not at all important						Very important

How much did this **negative** event affect you <u>at the time?</u>

1	2	3	4	5	6	7
Not at all						Very much

Please answer the following questions thinking about the negative event you just described as honestly and sincerely as you can, by using the scale below.

1	2	3	4	5	6	7
Totally disagree						Totally agree
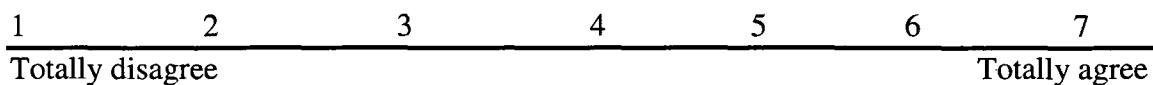
1. ____I feel that this event has become part of my identity.

2. ____This event has become a reference point for the way I understand myself and the world.

3. ____I feel that this event has become a central part of my life story.

4. ____This event has colored the way I think and feel about other experiences.

5. ____This event permanently changed my life.

6. ____I often think about the effects this event will have on my future.

7. ____This event was a turning point in my life.

Time Line Manipulation

Close Condition

Year in University: _____   Academic Major: _____

Below is a **timeline** representing a portion of your life. Place a slash through the timeline to indicate **when** this **negative event** happened.

BIRTH   TODAY

OR

Distant Condition

Year in University: _____   Academic Major: _____

Below is a **timeline** representing a portion of your life. Place a slash through the timeline to indicate **when** this **negative event** happened.

Beginning of 2007   TODAY

The figures below represent "the self" as a circle. Think of the circle below as representing your Current Self. This circle includes everything about your current personality, your attitudes, values, likes and dislikes. Think of this circle as encompassing everything that you personally feel is part of **Your Current Self** - in other words, everything that you consider important for defining who you are as a person now, at your current age.

Current Self

Next, think of the circle representing your Past Self as the person you were around the time of the **negative event** you described. This circle includes everything about your past personality, your attitudes, values, likes and dislikes from that time. Think of this circle as encompassing everything that you personally felt was part of **your past self before the negative event (that you described earlier) occurred** - in other words, everything that you considered important for defining who you were as a person then, before the time of this recalled experience.

Past Self

Please circle the picture below which best describes how close you currently feel to your past self. In other words, how much overlap is there between who you are now and who you were **before the negative event you described**?

1. Current Self | Past Self
2. Current Self | Past Self
3. Current Self | Past Self
4. Current Self | Past Self

5. Current Self | Past Self
6. Current Self | Past Self
7. Current Self | Past Self
8. Current Self | Past Self

Sometimes events tend to *feel* closer or further away, regardless of how long ago it actually occurred. Think about the **negative event** that you described earlier in the study. Place a mark through the lines below at the points that best indicate how far away that event *feels* to you now.

Feels very close   Feels very distant

_____

Feels like yesterday   Feels like a long time ago

_____

Posttraumatic Growth and Decline Inventory (PTGDI)

Indicate for each of the statements below the degree to which this change occurred in your life
as a result of your negative event, using the following scale.

	Not at All	Very Small Degree	Small Degree	Moderate Degree	Great Degree	Very Great Degree	N/A
1) I have a better understanding of spiritual matters.	1	2	3	4	5	6	N/A
2) I'm able to do better things with my life.	1	2	3	4	5	6	N/A
3) I can better appreciate each day.	1	2	3	4	5	6	N/A
4) I find it difficult to clarify priorities about what is important in life.	1	2	3	4	5	6	N/A
5) I put more effort into my relationships.	1	2	3	4	5	6	N/A
6) I have less of an appreciation for the value of my own life.	1	2	3	4	5	6	N/A
7) I am less capable of doing better things with my life.	1	2	3	4	5	6	N/A
8) I more clearly see that I can count on people in times of trouble.	1	2	3	4	5	6	N/A
9) I have come to realize that I'm not as strong as I thought I was.	1	2	3	4	5	6	N/A
10) I know better that I can handle difficulties.	1	2	3	4	5	6	N/A
11) I learned a great deal about how wonderful people are.	1	2	3	4	5	6	N/A
12) I have less compassion for others.	1	2	3	4	5	6	N/A
13) I more clearly see that I cannot count on people in times of trouble.	1	2	3	4	5	6	N/A
14) I have fewer interests than before.	1	2	3	4	5	6	N/A
15) I have a stronger religious faith.	1	2	3	4	5	6	N/A

As a result of this event...	Not at All	Very Small Degree	Small Degree	Moderate Degree	Great Degree	Very Great Degree	N/A
16) New opportunities are available which wouldn't have been otherwise.	1	2	3	4	5	6	N/A
17) I have a poorer sense of my purpose in life.	1	2	3	4	5	6	N/A
18) I am less likely to try to change things that need changing.	1	2	3	4	5	6	N/A
19) I learned a great deal about how disappointing people are.	1	2	3	4	5	6	N/A
20) I am better able to accept the way things work out.	1	2	3	4	5	6	N/A
21) I have a greater feeling of self-reliance.	1	2	3	4	5	6	N/A
22) I have a weaker religious faith.	1	2	3	4	5	6	N/A
23) I am more willing to express my emotions.	1	2	3	4	5	6	N/A
24) I have a greater sense of closeness with others.	1	2	3	4	5	6	N/A
25) I have a poorer understanding of spiritual matters.	1	2	3	4	5	6	N/A
26) I find it harder to accept needing others.	1	2	3	4	5	6	N/A
27) I am more likely to try to change things that need changing.	1	2	3	4	5	6	N/A
28) I discovered that I'm stronger than I thought I was.	1	2	3	4	5	6	N/A
29) I developed new interests.	1	2	3	4	5	6	N/A
30) I am less able to accept the way things work out.	1	2	3	4	5	6	N/A
31) I established a clearer path for my life.	1	2	3	4	5	6	N/A
32) I am less certain that I can handle difficulties.	1	2	3	4	5	6	N/A

As a result of this event...	Not at All	Very Small Degree	Small Degree	Moderate Degree	Great Degree	Very Great Degree	N/A
33) I have a greater appreciation for the value of my own life.	1	2	3	4	5	6	N/A
34) I have more compassion for others.	1	2	3	4	5	6	N/A
35) Fewer opportunities are available than would have been before.	1	2	3	4	5	6	N/A
36) I better accept needing others.	1	2	3	4	5	6	N/A
37) I am less willing to express my emotions.	1	2	3	4	5	6	N/A
38) I have a less clear path for my life.	1	2	3	4	5	6	N/A
39) I have a greater sense of distance from others.	1	2	3	4	5	6	N/A
40) I appreciate each day less than I did before.	1	2	3	4	5	6	N/A
41) I have a diminished feeling of self-reliance.	1	2	3	4	5	6	N/A
42) I have a better sense of priorities about what is important in life.	1	2	3	4	5	6	N/A
43) I put less effort into my relationships.	1	2	3	4	5	6	N/A
44) I have a greater sense of my purpose in life.	1	2	3	4	5	6	N/A

Current Feelings about Negative Event

Please answer some questions about the negative experience you just described by circling the appropriate number on the scale.

To what degree are you still feeling the consequences of this **negative** event?

1	2	3	4	5	6	7
Not at all						Very much

Imagine for a moment what you would be like if this event had <u>not</u> happened. Please indicate the degree to which you would be the same or different as a person had this negative event <u>never</u> occurred.

1	2	3	4	5	6	7
would be very different in mostly <u>bad</u> ways			would be basically the same		would be very different in mostly <u>good</u> ways	

If you had the chance to go back and <u>change</u> the negative event (to make it NOT happen), how likely would you be to change it?

1	2	3	4	5	6	7
I would not change it even if I could				if I could I, would choose for it NOT to have happened		

Imagine you had an eraser and you could erase this event from ever having happened in your life. How likely would you be to erase the event or to leave it in place?

1	2	3	4	5	6	7
I would leave it					I would erase it without hesitation	

Reflecting on your answer to the last few questions, please explain WHY you would make the decision to either change/erase the event, or to leave it unchanged, if you had the chance.

_____

_____

_____

_____

_____

_____

For items 1 –10 please use the following scale and put the appropriate letter(s) in the space provided.

1	2	3	4	5	6	7	8	9
strongly disagree		somewhat disagree		neither agree nor disagree		somewhat agree		strongly agree

1. ___ On the whole I am satisfied with myself.

2. ___ At times I think I am no good at all.

3. ___ I feel that I have a number of good qualities.

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 certainly feel useless at times.

7. ___ I feel that I'm a person of worth, at least on an equal plane with others.

8. ___ I wish I could have more respect for myself.

9. ___ All in all I am inclined to feel that I am a failure.

10. ___ I take a positive attitude toward myself.

Below are five statements that you may agree or disagree with. Using the 1 - 7 scale below indicate your agreement with each item by placing the appropriate number on the line preceding that item. Please be open and honest in your responding.

7 - Strongly agree
6 - Agree
5 - Slightly agree
4 - Neither agree nor disagree
3 - Slightly disagree
2 - Disagree
1 - Strongly disagree

_____ In most ways my life is close to my ideal.

_____ The conditions of my life are excellent.

_____ I am satisfied with my life.

_____ So far I have gotten the important things I want in life.

_____ If I could live my life over, I would change almost nothing.

This scale consists of a number of words that describe different feelings and emotions. Read each item and then mark the appropriate answer in the space next to that word. Indicate to what extent you feel this way right now, that is, at the present moment. Use the following scale to record your answers.

1	2	3	4	5
very slightly/ or not at all	a little	moderately	quite a bit	extremely

_____ distressed   _____ anxious

_____ upset   _____ inspired

_____ strong   _____ nervous

_____ guilty   _____ determined

_____ proud   _____ afraid

_____ sad   _____ happy

_____ fortunate   _____ joyful

_____ ashamed   _____ thankful

_____ contented   _____ weak

Try to think of something <u>very positive</u> that has happened <u>within the past 2 years</u>. This could be one of a variety of events such as an academic, athletic, or interpersonal success. This experience can involve other people but it must have had a <u>direct impact</u> <u>on *your self*</u>. That is, it should have made you feel good about yourself.

Once you have thought of a positive life event, please describe it briefly (in one or two sentences) below.

_____

_____

_____

_____

2. Please estimate, to the best of your ability, the actual date of this positive event:

$$\frac{\qquad\qquad / \qquad\qquad}{\text{Month} / \text{Year}}$$

Sometimes, for a variety of reasons, people do not respond to study questions honestly or accurately. We recognize that this may occur, and it is very helpful to us in understanding our results if we can identify such cases. Please help us by answering the question below about how you responded to the questionnaire. You still receive full credit for participation in this study regardless of your response.

➢ Have you responded to this questionnaire package accurately and honestly?
 ____Yes   _____No

Other Condition

Demographics

Age: _____   Gender: _____

Do you have any religious or spiritual beliefs?

    Yes ☐

    No ☐

Were religious or spiritual beliefs an important part of growing up?

    Yes ☐

    No ☐

What is your religious or spiritual belief (if any)? _____

How important are your religious or spiritual beliefs (if any) in your life?

Not at All	Somewhat	Moderately	Reasonably	Very Important
1 ☐	2 ☐	3 ☐	4 ☐	5 ☐

Please take some time to think about a **negative** event that happened TO ANOTHER PERSON whom you know well within the last **three** years. It could be something that person did or something that happened to them. The experience could have involved other people (or you) indirectly but what is important is that it had a **direct impact on THAT PERSON** and their sense of well being (it should have made them feel **bad**).

Please think about the specific *negative event* and describe it briefly below.

_____

_____

_____

_____

_____

_____

Please estimate, as best as you can, the actual date of this **negative** experience:

_____/_____
Month / Year

Please answer some questions about the **negative** experience you just described by circling the appropriate number on the scale.

Who did this event happen to primarily (i.e. did the **negative** event happen to THE PERSON YOU IDENTIFIED specifically or to someone else even if it affected them indirectly)?
_____ The person you identified   _____ Self or _____ Someone Else

Please consider how the negative event affected the person you identified.

How intense was the event for them <u>at the time</u>?

1	2	3	4	5	6	7
Not at all						Very Intense

How positive or negative was this event for them <u>at the time</u>?

1	2	3	4	5	6	7
Very Positive						Very Negative

How personally important was this **negative** event to their life <u>at the time</u>?

1	2	3	4	5	6	7
Not at all important						Very important

How much did this **negative** event affect them <u>at the time?</u>

1	2	3	4	5	6	7
Not at all						Very much

Please answer the following questions thinking about the negative event you just described as honestly and sincerely as you can, by using the scale below.

1	2	3	4	5	6	7
Totally disagree						Totally agree

1. ____I feel that this event has become part of their identity.

2. ____This event has become a reference point for the way they understand themselves and   the world.

3. ____I feel that this event has become a central part of their life story.

4. ____This event has colored the way they think and feel about other experiences.

5. ____This event permanently changed their life.

6. ____I often think about the effects this event will have on their future.

7. ____This event was a turning point in their life.

Time Line Manipulation

Close Condition

Year in University: _____   Academic Major: _____

Sometimes, when we think about a specific event from the past, it can be helpful to place it on a time line to visualize when it happened. Below is a **timeline** representing a portion of the life of THE PERSON YOU IDENTIFIED. Place a slash through the timeline to indicate **when** this **negative event** happened.

BIRTH   TODAY

OR

Distant Condition

Year in University: _____   Academic Major: _____

Sometimes, when we think about a specific event from the past, it can be helpful to place it on a time line to visualize when it happened. Below is a **timeline** representing a portion of the life of THE PERSON YOU IDENTIFIED. Place a slash through the timeline to indicate **when** this **negative event** happened.

Beginning of 2007   TODAY

The figures below represent "the self" as a circle. Think of the circle below as representing the current self of THE PERSON YOU IDENTIFIED. This circle includes everything about their current personality, their attitudes, values, likes and dislikes. Think of this circle as encompassing everything that you personally feel is part of **Their Current Self** - in other words, everything that you consider important for defining who they are as a person now, at their current age.

Current
Self

Next, think of the circle representing their Past Self as the person they were around the time of the **negative event** you described. This circle includes everything about their past personality, their attitudes, values, likes and dislikes from that time. Think of this circle as encompassing everything that you personally felt was part of **their past self before the negative event (that you described earlier) occurred** - in other words, everything that you considered important for defining who they were as a person then, before the time of this recalled experience.

Past
Self

Please circle the picture below which best describes how close you think THE PERSON YOU IDENTIFIED currently feels to their past self. In other words, how much overlap is there between who they are now and who they were **before the negative event you described**?
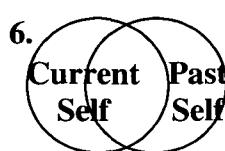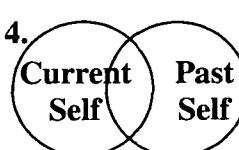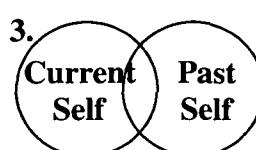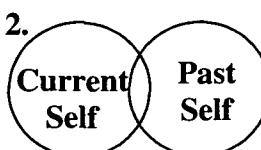
1. Current Self | Past Self
2. Current Self | Past Self
3. Current Self | Past Self
4. Current Self | Past Self

5. Current Self | Past Self
6. Current Self | Past Self
7. Current Self | Past Self
8. Current Past Self Self

Sometimes events tend to *feel* closer or further away, regardless of how long ago it actually occurred. Think about the **negative event** that you described earlier in the study. Place a mark through the lines below at the points that best indicate how far away that event *feels* to you now.

Feels very close   Feels very distant

_____

Feels like yesterday   Feels like a long time ago

_____

Posttraumatic Growth and Decline Inventory (PTGDI)

Indicate for each of the statements below the degree to which this change occurred in their life as a result of their negative event, using the following scale.

	Not at All	Very Small Degree	Small Degree	Moderate Degree	Great Degree	Very Great Degree	
1) They have a better understanding of spiritual matters.	1	2	3	4	5	6	N/A
2) They are able to do better things with their life.	1	2	3	4	5	6	N/A
3) They can better appreciate each day.	1	2	3	4	5	6	N/A
4) They find it difficult to clarify priorities about what is important in life.	1	2	3	4	5	6	N/A
5) They put more effort into their relationships.	1	2	3	4	5	6	N/A
6) They have less of an appreciation for the value of their own life.	1	2	3	4	5	6	N/A
7) They are less capable of doing better things with their life.	1	2	3	4	5	6	N/A
8) They more clearly see that they can count on people in times of trouble.	1	2	3	4	5	6	N/A
9) They have come to realize that they're not as strong as they thought they were.	1	2	3	4	5	6	N/A
10) They know better that they can handle difficulties.	1	2	3	4	5	6	N/A
11) They learned a great deal about how wonderful people are.	1	2	3	4	5	6	N/A
12) They have less compassion for others.	1	2	3	4	5	6	N/A
13) They more clearly see that they cannot count on people in times of trouble.	1	2	3	4	5	6	N/A
14) They have fewer interests than before.	1	2	3	4	5	6	N/A

As a result of this event...	Not at All	Very Small Degree	Small Degree	Moderate Degree	Great Degree	Very Great Degree	
15) They have a stronger religious faith.	1	2	3	4	5	6	N/A
16) New opportunities are available which wouldn't have been otherwise.	1	2	3	4	5	6	N/A
17) They have a poorer sense of their purpose in life.	1	2	3	4	5	6	N/A
18) They are less likely to try to change things that need changing.	1	2	3	4	5	6	N/A
19) They learned a great deal about how disappointing people are.	1	2	3	4	5	6	N/A
20) They are better able to accept the way things work out.	1	2	3	4	5	6	N/A
21) They have a greater feeling of self-reliance.	1	2	3	4	5	6	N/A
22) They have a weaker religious faith.	1	2	3	4	5	6	N/A
23) They are more willing to express their emotions.	1	2	3	4	5	6	N/A
24) They have a greater sense of closeness with others.	1	2	3	4	5	6	N/A
25) They have a poorer understanding of spiritual matters.	1	2	3	4	5	6	N/A
26) They find it hard to accept needing others.	1	2	3	4	5	6	N/A
27) They are more likely to try to change things that need changing.	1	2	3	4	5	6	N/A
28) They discovered that they're stronger than they thought they were.	1	2	3	4	5	6	N/A
29) They developed new interests.	1	2	3	4	5	6	N/A
30) They are less able to accept the way things work out.	1	2	3	4	5	6	N/A

As a result of this event...	Not at All	Very Small Degree	Small Degree	Moderate Degree	Great Degree	Very Great Degree	
31) They established a clearer path for their life.	1	2	3	4	5	6	N/A
32) They are less certain that they can handle difficulties.	1	2	3	4	5	6	N/A
33) They have a greater appreciation for the value of their own life.	1	2	3	4	5	6	N/A
34) They have more compassion for others.	1	2	3	4	5	6	N/A
35) Fewer opportunities are available than would have been before.	1	2	3	4	5	6	N/A
36) They better accept needing others.	1	2	3	4	5	6	N/A
37) They are less willing to express their emotions.	1	2	3	4	5	6	N/A
38) They have a less clear path for their life.	1	2	3	4	5	6	N/A
39) They have a greater sense of distance from others.	1	2	3	4	5	6	N/A
40) They appreciate each day less than they did before.	1	2	3	4	5	6	N/A
41) They have a diminished feeling of self-reliance.	1	2	3	4	5	6	N/A
42) They have a better sense of priorities about what is important in life.	1	2	3	4	5	6	N/A
43) They put less effort into their relationships.	1	2	3	4	5	6	N/A
44) They have a greater sense of their purpose in life.	1	2	3	4	5	6	N/A

Current Feelings about Negative Event

Please answer some questions about the negative experience you just described by circling the appropriate number on the scale.

To what degree are they still feeling the consequences of this **negative** event?

1	2	3	4	5	6	7

Not at all   Very much
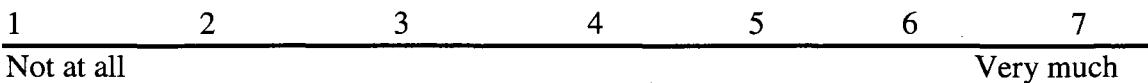
Imagine for a moment what this person would be like if this event had <u>not</u> happened.

Please indicate the degree to which they would be the same or different as a person had this negative event never occurred.

1	2	3	4	5	6	7

would be very different   would be basically   would be very different
in mostly <u>bad</u> ways   the same   in mostly <u>good</u> ways
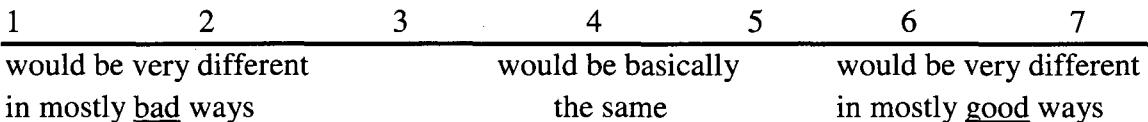
Imagine that you, personally, had the chance to go back and <u>change</u> the negative event (to make it NOT happen), how likely would you be to change it?

1	2	3	4	5	6	7

I would not change it   if I could I would choose for
even if I could   it NOT to have happened
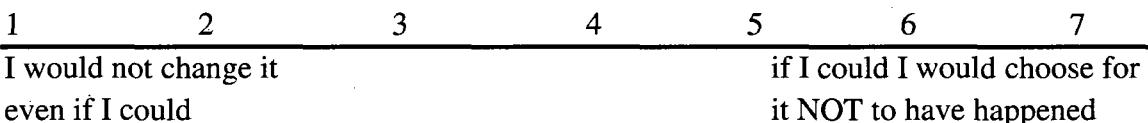
Imagine you had an eraser and you could erase this event from ever having happened in this person's life. How likely would you be to erase the event or to leave it in place?

1	2	3	4	5	6	7

I would leave it   I would erase it without
                                                   hesitation

Reflecting on your answer to the last few questions, please explain WHY you would make the decision to either change/erase the event, or to leave it unchanged, if you had the chance.

_____

_____

_____

_____

_____

For items 1 –10 please use the following scale and put the appropriate letter(s) in the space provided.

1	2	3	4	5	6	7	8	9
strongly disagree		somewhat disagree		neither agree nor disagree		somewhat agree		strongly agree

1. ___ On the whole I am satisfied with myself.

2. ___ At times I think I am no good at all.

3. ___ I feel that I have a number of good qualities.

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 certainly feel useless at times.

7. ___ I feel that I'm a person of worth, at least on an equal plane with others.

8. ___ I wish I could have more respect for myself.

9. ___ All in all I am inclined to feel that I am a failure.

10. ___ I take a positive attitude toward myself.

Below are five statements that you may agree or disagree with. Using the 1 - 7 scale below indicate your agreement with each item by placing the appropriate number on the line preceding that item. Please be open and honest in your responding.

7 - Strongly agree
6 - Agree
5 - Slightly agree
4 - Neither agree nor disagree
3 - Slightly disagree
2 - Disagree
1 - Strongly disagree

_____ In most ways my life is close to my ideal.

_____ The conditions of my life are excellent.

_____ I am satisfied with my life.

_____ So far I have gotten the important things I want in life.

_____ If I could live my life over, I would change almost nothing.

This scale consists of a number of words that describe different feelings and emotions. Read each item and then mark the appropriate answer in the space next to that word. Indicate to what extent you feel this way right now, that is, at the present moment. Use the following scale to record your answers.

1	2	3	4	5
very slightly/ or not at all	a little	moderately	quite a bit	extremely

_____ distressed   _____ anxious

_____ upset   _____ inspired

_____ strong   _____ nervous

_____ guilty   _____ determined

_____ proud   _____ afraid

_____ sad   _____ happy

_____ fortunate   _____ joyful

_____ ashamed   _____ thankful

_____ contented   _____ weak

Try to think of something <u>very positive</u> that has happened <u>within the past 2 years</u>. This could be one of a variety of events such as an academic, athletic, or interpersonal success. This experience can involve other people but it must have had a <u>direct impact</u> on *your self*. That is, it should have made you feel good about yourself.

Once you have thought of a positive life event, please describe it briefly (in one or two sentences) below.

_____

_____

_____

_____

2. Please estimate, to the best of your ability, the actual date of this positive event:

_____/_____
Month / Year

Sometimes, for a variety of reasons, people do not respond to study questions honestly or accurately. We recognize that this may occur, and it is very helpful to us in understanding our results if we can identify such cases. Please help us by answering the question below about how you responded to the questionnaire. You still receive full credit for participation in this study regardless of your response.

➢ Have you responded to this questionnaire package accurately and honestly?
    ____Yes   ____No

References

Aldwin, C. M. (2007). *Stress, coping, and development: An integrative perspective* (2nd Ed.). The Guilford Press: New York.

Aldwin, C.M., & Levenson, M. R. (2004). Posttraumatic growth: A developmental perspective. *Psychological Inquiry, 15,* 19-22.

Aldwin, C. M., Sutton, K. J., & Lachman, M. (1996). The development of coping resources in adulthood. *Journal of Personality, 64,* 837-870. doi:10.1111/j.1467-6794.tb00946.x

American Psychiatric Association (2000). *Diagnostic and statistical manual of mental disorders text revised* (4th ed.). Arlington, VA: Author.

Armeli, S., Gunthert, K. C., & Cohen, L. (2001). Stressor appraisals, coping, and post-event outcomes: The dimensionality and antecedents of stress-related growth, *Journal of Social and Clinical Psychology, 20,* 366-395.

Baker, J. M., Kelly, C., Calhoun, L. G., Cann, A., & Tedeschi, R. G. (2008). An examination of posttraumatic growth and posttraumatic depreciation: Two exploratory studies. *Journal of Loss and Trauma, 13,* 450-465. doi:10.1080/15325020802171367

Berntsen, D., & Rubin, D. C. (2006). The centrality of event scale: A measure of integrating a trauma into one's identity and its relation to post-traumatic stress disorder symptoms. *Behaviour Research and Therapy, 44,* 219-231. doi:10.1016/j.brat.2005.01.009

Bower, J. E., Kemeny, M. E., Taylor, S. E., & Fahey, J. L. (1998). Cognitive

processing, discovery of meaning, CD4 decline, and AIDS-related mortality

among bereaved HIV-seropositive men. *Journal of Consulting and Clinical

Psychology, 66,* 979-986.

Brown, J. D. & McGill, K. L. (1989). The cost of good fortune: When positive life

events produce negative health consequences. *Journal of Personality and Social

Psychology, 57,* 1103-1110.

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,* 521-527.

doi:10.1023/A:1007745627077

Calhoun, L. G., & Tedeschi, R. G. (2004). Author's response: The foundations of

posttraumatic growth: New considerations, *Psychological Inquiry, 15,* 93-102.

doi:10.1207/s15327965pli1501_03

Campbell, W. K., Brunell, A. B., & Foster, J. D. (2004). Sitting here in limbo: Ego

shock and posttraumatic growth. *Psychological Inquiry, 15,* 22-25.

Cronkite, W. (1999). *Thinkexist.com quotations: Walter Cronkite quotes.* **Retrieved on

May 1, 2010, from http://thinkexist.com/quotation/in_seeking_truth_you

have_to_get_both_sides_of_a/226449.html**

Davis, C. G., Wortman, C. B., Lehman, D. R., & Silver, R. C. (2000). Searching for

meaning in loss: Are clinical assumptions correct? *Death Studies, 24,* 497-540.

Diener, E., Emmons, R. A., Larsen, R. J., & Griffin, S. (1985). The satisfaction with

life scale. *Journal of Personality Assessment, 49,* 71-75.

doi:10.1207/s15327752jpq4901_13

Frazier, P., Conlon, A., & Glaser, T. (2001). Positive and negative life changes

following sexual assault. *Journal of Consulting and Clinical Psychology, 69,*

1048-1055. doi:10.1037/0022-006X.69.60.1048

Gottlieb, B. H., Still, E., & Newby-Clark, I. R. (2007). Types and precipitants of growth

and decline in emerging adulthood. *Journal of Adolescent Research, 22,* 132-

155.

Helgeson, V. S., Reynolds, K. A., & Tomich, P. L. (2006). A meta-analytic review of

benefit finding and growth. *Journal of Consulting and Clinical Psychology, 74,*

797-816. doi:10.1037/0022-006X.74.5.797

Janoff-Bulman, R. (1989). Assumptive worlds and the stress of traumatic events:

Applications of the schema construct. *Social Cognition, 7,* 113-136.

Janoff-Bulman, R. (1992). *Shattered assumptions: Towards a new psychology of

trauma.* New York: Free Press.

Janoff-Bulman, R. (2004). Posttraumatic growth: Three exploratory models.

Psychological Inquiry, 15, 30-34.

Joseph, S., Lindley, P. A., Shelvin, M., Goodfellow, B., & Butler, L. D. (2006).

Assessing positive and negative changes in the aftermath of adversity: A short

form of the changes in outlook questionnaire. *Journal of Loss and Trauma, 11,*

85-99. doi: 10.1080/15325020500358241

Joseph, S., Williams, R., & Yule, W. (1993). Changes in outlook following disaster:

The preliminary development of a measure to assess positive and negative

responses. *Journal of Traumatic Stress, 6,* 271-279. doi:10.1007/BF00974121

Lehman, D. R., Davis, C. G., Delongis, A., Wortman, C. B., Bluck, S., Mandel, D. R.,

& Ellard, J. H. (1993). Positive and negative life changes following bereavement

and their relation to adjustment. *Journal of Social and Clinical Psychology, 12,*

90-112.

Lehman, D. R., Wortman, C. B., & Williams, A. F. (1987). Long-term effects of losing

a spouse or child in a motor vehicle crash. *Journal of Personality and Social*

Psychology, 52, 218-231. doi:10.1037/0022-3514.52.1.218

Linley, P. A., & Joseph, S. (2004). Positive changes following trauma and adversity: A

review. *Journal of Traumatic Stress, 17,* 11-21.

doi:10.1023/B:JOTS.0000014671.27856.7e

McFarland, C., & Alvaro, C. (2000). The impact of motivation on temporal

comparisons: Coping with traumatic events by perceiving personal growth.

Journal of Personality and Social Psychology, 79, 327-343. doi:10.1037/0022-

3514.79.3.327

Mols, F., Vingerhoets, A. J. J. M., Coebergh, J. W. J., & van de Polls-Franse, L. V.

(2009). Well-being, posttraumatic growth and benefit finding in long-term

breast cancer survivors. *Psychology and Health, 24,* 583-595.

doi:10.1080/08870440701671362

Murphy, S. A., Johnson, L. C., & Lohan, J. (2003). Finding meaning in a child's violent

    death: A five-year prospective analysis of parents' personal narratives and

    empirical data. *Death Studies, 27,* 381-404. doi:10.1080/07481180302879

Park, C. L. (2004). The notion of growth following stressful life experiences: Problems

    and prospects. *Psychological Inquiry, 15,* 69-75.

Park, C. L., Cohen, L. H., & Murch, R. L. (1996). Assessment and prediction of stress-

    related growth. *Journal of Personality, 64,* 71-105. doi:10.1111/j.1467-

    6494.1996.tb00815.x

Park, C. L., & Fenster, J. R. (2004). Stress-related growth: Predictors of occurrence and

    correlates with psychological adjustment. *Journal of Social and Clinical*

    Psychology, 23, 195-215.

Proffitt, D., Cann, A., Calhoun, L. G., & Tedeschi, R. G. (2007). Judeo-Christian clergy

    and personal crisis: Religion, posttraumatic growth and well being. *Journal of*

    Religion and Health, 46, 219-231. doi:10.1007/s10943-006-9074-1

Rosenberg, M. (1965). *Society and the adolescent self-image.* Princeton: Princeton

    University Press.

Ross, M., & Wilson, A. E. (2002). It feels like yesterday: Self-esteem, valence of

    personal past experience, and judgments of subjective distance. *Journal of*

    Personality and Social Psychology, 82, 792-803.

Ross, M., & Wilson, A. E. (2003). Autobiographical memory and conceptions of self:

    Getting better all the time. *Current Directions in Psychological Science, 12,* 66-

    69.

Sawyer, A., Ayers, S., & Field, A. P. (2010). Posttraumatic growth and adjustment

among individuals with cancer or HIV/AIDS: A meta-analysis. *Clinical*

Psychology Review, 30, 436-447. doi:10.1016/j.cpr.2010.02.004

Tallman, B., Shaw, K., Schultz, J., & Altmaier, E. (2010). Well being and posttraumatic

growth in unrelated donor marrow transplant survivors: A nine-year longitudinal

study. *Rehabilitation Psychology, 55,* 204-210. doi:10.1037/a0019541

Tedeschi, R. G., & Calhoun, L. G. (1996). The Posttraumatic growth inventory:

Measuring the positive legacy of trauma. *Journal of Traumatic Stress, 9,* 455-

471. doi:10.1007/BF02103658

Tedeshi, R. G., & Calhoun, L. G. (2004). Posttraumatic growth: Conceptual foundations

and empirical evidence. *Psychological Inquiry, 15,* 1-18.

doi:10.1207/s15327965pli1501_01

Tedeschi, R. G., Calhoun, L. G., & Cann, A. (2007). Evaluating resource gain:

Understanding and misunderstanding posttraumatic growth. *Applied*

Psychology: An International Review,56, 346-406. doi: 10.1111/j.1464-

0597.2007.00299.x

Tedeschi, R. G., Park, C. L., & Calhoun, L. G. (1998). Posttraumatic growth:

Conceptual issues. In R. G. Tedeschi, C. L. Park, & L. G. Calhoun (Eds.),

Posttraumatic growth: Positive changes in the aftermath of crisis. (pp. 1-21).

Mahwah, NJ, US: Lawrence Erlbaum Associates, Inc.

Ullrich, P. M., & Lutgendorf, S. K. (2002). Journalling about stressful events: Effects of

cognitive processing and emotional expression. *Annals of Behavioral Medicine,*

24, 244-250. doi:10.1207/515324796ABM2403_10

Watson, D., Clark, L.A., & Tellegen, A. (1988). Development and validation of brief

measures of positive and negative affect: The PANAS scales. *Journal of*

Personality and Social Psychology, 54, 1063-1070. doi:10.1037/0022-

3514.54.6.1063

Wilson, A. E., & Ross, M. (2001). From chump to champ: People's appraisals of their

earlier and present selves. *Journal of Personality and Social Psychology, 80,*

572-584.

Wilson, A. E., & Ross, M. (2003). The identity function of autobiographical memory:

Time is on our side. *Memory, 11,* 137-145.

Wortman, C. B. (2004). Posttraumatic growth: Progress and problems. *Psychological*

Inquiry, 15, 81-89.

Wortman, C. B., & Boerner, K. (2007). Beyond the myths of coping with loss:

Prevailing assumptions versus scientific evidence. In H. S. Friedman, & R. C.

Silver (Eds.), *Foundations of health psychology.* (pp. 285-324). New York, NY,

US: Oxford University Press.

Table 1

PTGI Ambiguous/Continuum Items

Ambiguous Items	New Wording
My priorities about what is important in life.	My priorities about what is important in life *has*…
An appreciation for the value of my own life.	An appreciation for the value of my own life *has*…
Appreciating each day.	My appreciation *for* each day *has*…
A feeling of self-reliance.	My feeling of self-reliance *has*…
Knowing *I* can handle difficulties.	My ability *to* handle difficulties *has*…
Being able to accept the way things work out.	My ability to accept the way things work out *has*…
Knowing *that* I can count on people in times of trouble.	Knowing I can count on people in times of trouble *has*…
A sense of closeness with others.	My sense of closeness with others *has*…
A willingness to express my emotions.	My willingness to express my emotions *has*…
Having compassion for others.	My compassion for others *has*…
Putting effort into my relationships.	The effort *I put* into my relationships *has*…

Note. Items were taken from Tedeschi and Calhoun (1996) and adjusted to be tested on a continuum to also assess consequences in the negative direction. Any adjustments are indicated with italics.

Table 2

PTGI Mirrored Items

Growth Items	Decline Items
I discovered that I'm stronger than I thought I was.	My capacity to cope with difficulties has deteriorated.
I developed new interests.	I have lost interest in the things I used to enjoy.
I established a new path for my life.	My life's path has taken a turn for the worse.
I have a stronger religious faith.	My religious faith has weakened.
I'm able to do better things with my life.	I feel like I keep making mistakes.
I'm more likely to try to change things which need changing.	I'm less inclined to make changes in my life.
I learned a great deal about how wonderful people are.	I have found that others keep disappointing me.
A better understanding of spiritual matters.*	I am more confused about spiritual matters.
New opportunities are available which wouldn't have been otherwise.	Many opportunities have been closed to me.
I accept needing others.**	I have more trouble asking for help when needed.

Note. Items were taken from Tedeschi and Calhoun (1996) and mirrored to create items in the decline direction. Wording of two items were adjusted for clarity * "*I have* a better understanding of spiritual matters" and ** "*I am more able to* accept needing others"

Table 3

Means and Standard Deviations of Measures

Measures	Means (SD)
Self Esteem	6.68 (1.39)
PTGDI	
Growth	2.85 (1.07)
Decline	1.82 (.80)
Continuum Score [a]	7.75 (1.54)
Difference Score [b]	1.03 (1.16)
Well-Being	
Life Satisfaction	4.96 (1.23)
Positive Affect	2.78 (.87)
Negative Affect	1.85 (.59)
Past Features (at the Time of the Event)	
Severity	6.24 (1.07)
Positivity	1.62 (1.15)
Negativity	6.34 (.96)
Importance	6.30 (1.03)
Bothersome at time	6.47 (1.05)
Degree Event was Caused by:	
Yourself	2.81 (2.51)
Someone Else	4.49 (2.48)
External Circumstances/Situations	5.17 (2.05)
Bad Luck	3.08 (2.40)
Current Feelings	
Extent can Avoid Similar Event	3.04 (2.14)
Encounter Similar	4.63 (1.85)
Complete (Over and Done with)	3.94 (2.11)
Still Experiencing Consequences	4.31 (1.79)
Valence of Consequences	3.39 (1.64)
Temporal Features	
Closeness of Event	4.02 (2.58)
Event Distance (how long ago)	4.65 (2.74)
Subjective Temporal Distance [c]	4.33 (2.49)
Identity Overlap	5.34 (1.66)

Note. [a] Growth and decline assessed on one dimension. [b] Score created by subtracting decline from growth. [c] Means computed from two temporal distance items.

Table 4

Intercorrelations among Growth and Decline Scores

	1	2	3	4
1. Growth alone	-			
2. Decline alone	.27**	-		
3. Growth & Decline difference score	.74**	-.44**	-	
4. Growth & Decline continuum score	.62**	-.06	.62**	-

Note.   ** p < .01

Table 5

Means Comparison of Growth and Decline Scores to Values of no change

	Mean	Standard Deviation
Growth alone [a]	2.85**	1.07
Decline alone [a]	1.82**	0.80
Growth & Decline difference score [b]	1.03**	1.16
Growth & Decline continuum score [c]	7.75**	1.54

Note.   Means were tested against the value of 1 (no change) [a] or 6 (no change) [c] while, difference scores were tested against the value of 0 (no growth over decline) [b]

** p < .001

Table 6

Percentage of Reported Growth and Decline

	% Growth	% No Change	% Decline
Growth alone	77%	23%	-
Decline alone	-	68%	32%
Growth & Decline difference score [a]	51%	34%	15%
Growth & Decline continuum score	60%	33%	7%

Note. [a] '% no change' value indicates either % of no change or equal amounts of growth and decline.

Table 7

Summary of Regression Analysis for Variables Predicting Well-Being (N = 121)

	Life Satisfaction			Positive Affect			Negative Affect			Self Esteem			Positive Outcome [a]		
	β	p	R²	β	p	R²	β	p	R²	β	p	R²	β	p	R²
Separate Regressions															
Growth alone [b]	.14	.12	.02	.30	.001	.09	.14	.13	.02	.03	.75	.001	.10	.30	.01
Decline alone [b]	-.38	<.001	.15	-.08	.39	.01	.62	<.001	.38	-.42	<.001	.18	-.53	<.001	.28
Growth & Decline [b] Difference Score	.39	<.001	.15	.34	<.001	.15	-.31	.001	.10	.32	<.001	.10	.45	<.001	.20
Growth & Decline [b] Continuum Score	.32	<.001	.11	.36	<.001	.13	-.05	.59	.002	.12	.20	.01	.28	.002	.08
Step 1			.21			.12			.38			.20			.34
Growth controlling for Decline [c]	.26	.003		.35	<.001		-.03	.74		.15	.08		.26	.001	
Decline controlling for Growth [c]	-.45	<.001		-.17	.06		.63	<.001		-.46	<.001		-.60	<.001	
Step 2			.29			.12			.38			.20			.35
Growth X Decline [c]	1.16	<.001		.21	.55		.07	.82		.01	.97		.42	.17	

Note. [a] Positive Outcome is a composite of life satisfaction, positive and negative affect, and self-esteem standardized means.
[b] Separate regression analyses were conducted to examine the contribution of growth and decline.
[c] A regression analysis was conducted with growth and decline in one step and the interaction in another step.

Table 8

Correlations of Growth and Decline with Past Features (Feelings at the Time of the Event)

	Severity of Event	Positivity of Event	Negativity of Event	Importance of Event (at the time)	Amount of Bother (at the time)	Self Caused Event	Caused by Another	Caused by External Circumstances	Caused by Bad Luck
Growth	.15	.09	.01	.14	.12	.02	.16	.05	.06
Decline	.04	.23*	.02	.07	-.02	.18	.01	-.01	.30**
Growth & Decline difference score	.11	-.09	.03	.10	.13	-.10	.15	.05	-.15
Growth controlling for Decline	.12	.07	-.02	.11	.12	-.01	.15	.04	-.04
Growth & Decline continuum score	.30**	-.03	.21*	.28**	.26**	-.08	.03	.05	.08

Note. ** p <.01, * p <.05

Table 9

Correlations of Growth and Decline with Current Features

	Avoid	Encounter Similar Event	Over and Done with	Continued Consequences	Consequences Valence
Growth alone	.16	-.10	.05	.12	.31**
Decline alone	.06	-.04	-.15	.24**	-.08
Growth & Decline difference score	.12	-.06	.14	-.05	.32**
Growth controlling for Decline	.16	-.10	.13	.05	.37**
Growth & Decline continuum score	.06	.07	.05	-.01	.20*

Note.   ** p <.01

Table 10

Correlations of Growth and Decline with Temporal Features

	# of Months Since	Identity Overlap	Temp Distance
Growth alone	.15	-.27**	-.02
Decline alone	.06	-.31**	-.10
Growth & Decline difference score	.12	-.03	.05
Growth controlling for Decline	.11	-.21*	.00
Growth & Decline continuum score	.16	-.06	-.03

Note.   ** p <.01, * p <.05

Table 11a

Means and Standard Deviations of Measures

Measures	Means (SD)
Self Esteem	6.66 (1.49)
PTGI	
Overall Growth	3.57 (1.11)
Relating to Others	3.59 (1.41)
New Possibilities	3.33 (1.31)
Personal Strength	3.96 (1.25)
Spiritual Change	2.66 (1.55)
Appreciation for Life	4.08 (1.32)
PTGDI	
Growth	3.29 (1.00)
Decline	2.33 (1.11)
Growth & Decline difference score	.98 (1.43)
Relating to Others [a]	.94 (1.83)
New Possibilities [a]	.58 (1.55)
Personal Strength [a]	1.04 (2.08)
Spiritual Change [a]	.54 (1.79)
Appreciation of Life [a]	1.79 (1.81)
Well-Being	
Life Satisfaction	4.87 (1.37)
Positive Affect	3.09 (1.01)
Negative Affect	2.02 (.95)

Note. [a] PTGDI factor means are presented as difference
scores. Difference scores were created by subtracting
decline items from corresponding growth items.

Table 11b

Means and Standard Deviations of Negative Event Features

Event Features [a]	Means (SD)
Past Features (at the Time of the Event)	
Severity	6.54 (.78)
Positivity	1.54 (1.15)
Importance	6.23 (1.26)
Bothersome at time	6.52 (1.15)
Current Features	
Extent can Avoid Similar Event	3.55 (2.37)
Complete (Over and Done with)	3.82 (2.03)
Change Event	4.17 (1.64)
Parallel Self	5.04 (2.31)
Temporal Features	
Closeness of Event	4.20 (2.48)
Event Distance (how long ago)	4.49 (2.69)
Subjective Temporal Distance [b]	4.35 (2.47)
Identity Overlap	4.35 (1.71)

Note. [a] Items were on a 7-point Likert Scale ranging from
1 (not at all) to 7 (very) with the exception of Temporal
Distance measures (see Appendix B).
[b] Mean computed from two temporal distance items.

Table 12

Intercorrelations of Growth and Decline and Factors in Growth and Decline condition

	1	2	3	4	5	6	7	8
1. Growth alone	-							
2. Decline alone	.08	-						
3. Growth & Decline difference score	.64**	-.72**	-					
4. Factor 1- Relating to Others [a]	.52**	-.68**	.89**	-				
5. Factor 2 – New Possibilities [a]	.47**	-.57**	.78**	.56**	-			
6. Factor 3 – Personal Strength [a]	.49**	-.58**	.79**	.61**	.48**	-		
7. Factor 4 – Spiritual Change [a]	.37**	.00	.30†	.16	.31*	-.10	-	
8. Factor 5 – Appreciation for Life [a]	.53**	-.50**	.76**	.57**	.49**	.60**	.16	-

Note. [a] PTGDI factors are difference scores

$** \ p < .01, \ * \ p < .05, \ † \ p = .076$

Table 13

Mean Comparison of Growth and Decline Means to Values of no change or in Relation to Decline

	PTGDI Growth Means [a]	PTGDI Decline Means [a]	PTGDI Difference Score [b]	PTGI Growth Means [a]
Overall	3.29 (1.00)**	2.33 (1.11)**	.98 (1.43)**	3.57 (1.11)**
Factor 1 Relating to Others	3.45 (1.23)**	2.52 (1.23)**	.94 (1.83)*	3.59 (1.41)**
Factor 2 New Possibilities	2.91 (1.32)**	2.78 (1.33)**	.58 (1.55)*	3.33 (1.31)**
Factor 3 Personal Strength	3.54 (1.22)**	2.51 (1.28)**	1.04 (2.08)*	3.96 (1.25)**
Factor 4 Spiritual Change	2.43 (1.54)**	1.95 (1.11)**	.54(1.79)[†]	2.66 (1.55)**
Factor 5 Appreciation of Life	3.69 (1.32)**	1.93 (1.19)**	1.79(1.81)**	4.08 (1.32)**

Note. [a] Means were tested against the value of 1 (no change)
[b] Growth (overall and factors) reported for PTGDI are difference scores, PTGDI means were tested against the value of 0 (no growth over decline or no change)
** $p < .001$, * $p < .05$, [†] $p = .07$

Table 14

Percentage of Reported Growth and Decline (Growth and Decline condition)

	PTGDI[a]			PTGI[b]		
	% Growth	% no change	% Decline	% Growth	% no change	% Decline
Growth	49%	35%	16%	90%	10%	-
Factor 1 Relating to Others	48%	26%	26%	92%	8%	-
Factor 2 New Possibilities	33%	44%	23%	95%	5%	-
Factor 3 Personal Strength	51%	23%	26%	97%	3%	-
Factor 4 Spiritual Change	38%	43%	19%	72%	28%	-
Factor 5 Appreciation of Life	63%	30%	7%	97%	3%	-

Note. [a] Growth (overall and factors) reported for PTGDI are difference scores
 [b] PTGI growth and factors are growth alone.

Table 15

Correlations between Growth and Well-Being Measures

	Growth alone (PTGI sample)/Growth alone (PTGDI sample)/ Growth controlling for Decline [a]			
	Life Satisfaction	Positive Affect	Negative Affect	Self Esteem
Overall	.18/ .38**/.45**	.49**/.44**/.54**	.13/ -.14/ -.21	.02/.41**/.47**
Factor 1 Relating to Others	.33*/.41**/.42**	.50**/.34*/ .42**	-.04/ -.19/ -.19	.04/.40**/.41**
Factor 2 New Possibilities	.03/ .15/ .34*	.27†/ .29*/ .34*	.28†/ .06/ -.15	-.07/.21/ .39**
Factor 3 Personal Strength	.14/ .42**/.40**	.49**/.45**/.49**	.14/-.30*/-.29†	.09/.46**/.45**
Factor 4 Spiritual Change	.03/ .01/ .21	.20/ .27†/ .36*	.20/ -.30†/ .13	.05/.05/ .20
Factor 5 Appreciation of Life	-.02/ .27†/ .23	.43**/.38**/.47**	.12/ -.19/ -.18	.00/.28†/ .26

Note.   [a] Correlations and Partial Correlations of Growth and Growth factors with Well-Being are presented Growth alone (growth alone condition)/Growth alone (growth and decline condition)/Growth controlling for Decline respectively within each column.

** p < .01, * p < .05, † p < .10

Table 16

Correlations between Decline and Well-Being Measures

	PTGDI/PTGI [a]			
	Life Satisfaction	Positive Affect	Negative Affect	Self Esteem
Decline alone	-.50**/-	-.16/-	.65**/-	-.42**/-
Factor 1 Relating to Others	-.52**/-	-.17/-	.64**/-	-.42**/-
Factor 2 New Possibilities	-.45**/-	-.13/-	.63**/-	-.40**/-
Factor 3 Personal Strength	-.39*/-	-.25/-	.60**/-	-.41**/-
Factor 4 Spiritual Change	-.41**/-	-.06/-	.37*/-	-.35*/-
Factor 5 Appreciation of Life	-.41**/-	-.03/-	.49**/-	-.31*/-

Note: [a] Correlations of Decline and Decline factors with Well-Being are presented PTGDI/PTGI respectively within each column. We were only able to assess decline in one condition (growth and decline condition) as PTGI does not have decline items, thus there are no decline values for the PTGI.

   ** p < .01, * p < .05

Table 17

Correlations of Growth and Decline with Well-Being Measures

	PTGDI/PTGI[a]			
	Life Satisfaction	Positive Affect	Negative Affect	Self Esteem
Growth & Decline difference score/ PTGI Growth	.65**/.18	.44**/.49**	-.60**/.13	.61**/.02
Factor 1 Relating to Others	.64**/.33*	.35/ .50**	-.58**/-.04	.56**/.04
Factor 2 New Possibilities	.51**/.03	.35*/ .27†	-.50**/.28†	.51**/-.07
Factor 3 Personal Strength	.47**/.14	.41**/.49**	-.53**/.14	.51**/.09
Factor 4 Spiritual Change	.22/ .03	.32*/ .20	.18/ .20	.25/ .05
Factor 5 Appreciation of Life	.44**/-.02	.28†/ .43**	-.45**/.12	.39**/.00

Note. [a] Correlations are presented PTGDI/PTGI respectively within each column. PTGDI factors are difference scores

** p < .01, * p < .05, † p < .10

Table 18

Summary of Regression Analysis for Variables Predicting Well-Being (N = 84)

	Life Satisfaction			Positive Affect			Negative Affect			Self Esteem			Positive Outcome [a]		
	β	p	R^2	β	p	R^2	β	p	R^2	β	p	R^2	β	p	R^2
PTGI (N = 41) [b]															
Growth alone	.18	.26	.03	.49	.001	.24	.13	.41	.02	.02	.88	.001	.19	.23	.04
PTGDI (N = 43)															
Separate Regressions															
Growth alone [c]	.38	.01	.15	.44	.003	.20	-.14	.39	.02	.41	.007	.16	.43	.004	.18
Decline alone [c]	-.50	<.001	.23	-.17	.29	.03	.65	<.001	.42	-.42	.005	.18	-.53	<.001	.28
Step 1			.43			.24			.46			.37			.51
Growth controlling for Decline [d]	.42	<.001		.46	.002		-.19	.11		.44	<.001		.48	<.001	
Decline controlling for Growth [d]	-.53	<.001		-.20	.15		.66	<.001		-.46	.001		-.57	<.001	
Step 2			.45			.31			.49			.45			.58
Growth X Decline [d]	.56	.21		.97	.057		-.68	.12		.997	.03		1.00	.01	

Note.   [a] Positive Outcome is a composite of life satisfaction, positive and negative affect, and self-esteem standardized means.
  [b] Because the PTGI only measures growth, we were only able to report how growth alone predicts well-being.
  [c] Separate regression analyses were conducted to examine the contribution of growth and decline alone.
  [d] A regression analysis was conducted with growth and decline in one step and the interaction in another step.

Table 19

Correlations of Growth and Decline with Past Features

	Growth alone (PTGI sample)/Growth alone (PTGDI sample)/Growth controlling for Decline [a]			
	Severity of Event	Positivity of Event	Importance of Event (at the time)	Amount of Bother (at the time)
Overall	.10/ .12/ .08	.24/ .12/ .18	-.10/-.17/ -.23	.02/ -.24/ -.29[†]
Factor 1 Relating to Others	.00/ .05/ .03	.23/ .02/ .06	-.14/-.15/ -.21	.07/ -.15/ -.18
Factor 2 New Possibilities	.07/-.07/ -.18	.25/ .30*/ .40**	-.17/-.32*/-.41**	-.00/-.28/ -.36*
Factor 3 Personal Strength	.12/ .43**/.46**	.16/-.15/ -.12	-.05/ .23/ .22	-.09/ .04/ .05
Factor 4 Spiritual Change	.21/-.08/ -.15	.08/ .41**/.41**	.13/-.38*/-.41**	.15/-.43**/-.50**
Factor 5 Appreciation of Life	.13/ .15/ .15	.18/ .01/ .06	-.08/-.11/ -.16	-.07/-.23/ -.26

Note.   [a] Correlations and Partial Correlations of Growth and Growth factors with Past Features are presented Growth alone (growth alone condition)/Growth alone (growth and decline condition)/Growth controlling for Decline respectively within each column.

** p < .01, * p < .05, [†] p < .09

Table 20

Correlations of Growth and Decline with Past Features

	PTGDI/PTGI[a]			
	Severity of Event	Positivity of Event	Importance of Event (at the time)	Amount of Bother (at the time)
Growth & Decline difference score/ PTGI Growth	-.04/ .10	.04/ .24	-.15/ -.10	-.23/ .02
Factor 1 Relating to Others	-.05/ .00	-.02/ .23	-.13/ -.14	-.17/ .07
Factor 2 New Possibilities	-.31*/.07	.29†/ .25	-.32*/-.17	-.33*/-.00
Factor 3 Personal Strength	.23/ .12	-.14/ .16	.19/ -.05	-.01/ -.09
Factor 4 Spiritual Change	-.22/ .21	.43*/.08	-.35*/.13	-.41*/.15
Factor 5 Appreciation of Life	.06/ .13	-.10/ .18	-.01/ -.08	-.17/ -.07

Note. [a] Correlations are presented PTGDI/PTGI respectively within each column. PTGDI factors are difference scores
* p < .05, † p < .07

Table 21

Correlations of Growth and Growth controlling for Decline with Current Features

Growth alone (PTGI sample)/Growth alone (PTGDI sample)/Growth controlling for Decline [a]

	Avoid	Over and Done with	Parallel Self	Change Event
Overall	-.14/ -.05/.04	-.02/ .09/.11	.06/ -.31*/ -.43**	-.24/ -.25/ -.24
Factor 1 Relating to Others	-.20/ -.17/-.09	-.04/ .07/.00	-.12/ -.20/ -.25	-.19/ -.06/ -.07
Factor 2 New Possibilities	-.04/.25/.36*	.02/-.09/ .06	.16/ -.12/ -.31†	-.23/ -.38**/-.41**
Factor 3 Personal Strength	-.02/ -.15/-.07	.25/ .21/ .18	.05/ -.54**/-.64**	-.34*/-.26†/ -.26
Factor 4 Spiritual Change	-.13/ .20/.15	-.13/-.02/.18	.34*/-.15/ -.20	.03/ -.20/ -.17
Factor 5 Appreciation of Life	-.17/ -.21/-.12	-.30†/.08/.10	.09/ -.18/ -.27	-.15/ -.08/ -.10

Note.   [a] Correlations and Partial Correlations of Growth and Growth factors with Current Features are presented Growth alone (growth alone condition)/Growth alone (growth and decline condition)/Growth controlling for Decline respectively within each column.

** p < .01, * p < .05, † p < .10

Table 22

Correlations of Growth and Decline with Current Features

	PTGDI/PTGI [a]			
	Avoid	Over and Done with	Parallel Self	Change Event
Growth & Decline difference score/ PTGI Growth	-.13/-.14	.35*/-.02	-.47**/.06	-.28†/ -.24
Factor 1 Relating to Others	-.20/-.20	.29†/-.04	-.31*/ -.12	-.13/ -.19
Factor 2 New Possibilities	.07/-.04	.21/ .02	-.38*/ .16	-.46**/-.23
Factor 3 Personal Strength	-.17/-.02	.36*/.25	-.64**/.05	-.26†/ -.34*
Factor 4 Spiritual Change	.31†/-.13	.12/ -.13	-.03/ .34*	-.12/ .03
Factor 5 Appreciation of Life	-.21/-.17	.21/-.30†	-.21/ .09	.00/ -.15

Note: [a] Correlations are presented PTGDI/PTGI respectively within each column. PTGDI factors are difference scores

** p < .01, * p < .05, † p < .10

Table 23

Correlations between Growth and Temporal Features

Growth alone (PTGI sample)/Growth alone (PTGDI sample)/Growth controlling for Decline [a]

	# of Months Since	Identity Overlap	Temporal Distance
Overall	.45**/.22/.27†	-.44**/.00/-.06	.02/-.04/.03
Factor 1 Relating to Others	.24/ .21/ .25	-.24/ .12/ .05	-.11/-.05/-.01
Factor 2 New Possibilities	.44**/.12/.20	-.52**/-.20/-.22	.09/-.02/.05
Factor 3 Personal Strength	.44**/.18/.21	-.29†/ .09/ .03	.20/.08/.11
Factor 4 Spiritual Change	.43**/.14/.14	-.40*/-.05/-.03	.04/-.10/-.05
Factor 5 Appreciation of Life	.42**/.14/.21	-.41**/-.03/-.12	-.05/-.09/-.02

Note. [a] Correlations and Partial Correlations of Growth and Growth factors with Temporal Features are presented Growth alone (growth alone condition) /Growth alone (growth and decline condition)/Growth controlling for Decline respectively within each column.

** $p < .01$, * $p < .05$, † $p < .10$

Table 24

Correlations of Growth and Decline with Temporal Features

	# of Months Since	PTGDI/PTGI [a] Identity Overlap	Temporal Distance
Growth & Decline difference score/ PTGI Growth	.18/.45**	.08/-.44**	.13/.02
Factor 1 Relating to Others	.17/.24	.20/-.24	.08/-.11
Factor 2 New Possibilities	.12/.44**	-.18/-.52**	.14/.09
Factor 3 Personal Strength	.23/.44**	.02/-.29†	.20/.20
Factor 4 Spiritual Change	-.07/.43**	.03/-.40*	-.04/.04
Factor 5 Appreciation of Life	.09/.42**	.08/-.41**	.01/-.05

Note: [a] Correlations are presented PTGDI/PTGI respectively within each column.
PTGDI factors are difference scores.
** p < .01, * p < .05, † p < .08

Table 25

Reliability of Growth and Decline items by Self vs. Other condition

	Self	Other
Growth		
Overall	α = .93	α = .92
Factor 1 – Relating to Others	α = .87	α = .80
Factor 2 – New Possibilities	α = .81	α = .81
Factor 3 – Personal Strength	α = .75	α = .73
Factor 4 – Spiritual Change	α = .73	α = .70
Factor 5 – Appreciation of Life	α = .79	α = .78
Decline		
Overall	α = .94	α = .93
Factor 1 – Relating to Others	α = .85	α = .82
Factor 2 – New Possibilities	α = .77	α = .79
Factor 3 – Personal Strength	α = .76	α = .72
Factor 4 – Spiritual Change	α = .81	α = .81
Factor 5 – Appreciation of Life	α = .64	α = .72

Table 26

Means and Standard Deviations of Measures by conditions

Measures	Self Close Means (SD)	Self Distant Means (SD)	Other Close Means (SD)	Other Distant Means (SD)
PTGDI				
Growth alone	3.69 (.84)	3.34 (1.08)	3.70 (.91)	3.86 (.89)
Decline alone	2.18 (.84)	1.92 (.82)	2.31 (.94)	2.13 (.81)
Growth & Decline difference score	1.46 (1.38)	1.43 (1.21)	1.42 (1.44)	1.76 (1.31)
Relating to Others [a]	1.18 (1.85)	1.33 (1.69)	1.53 (1.59)	2.13 (1.24)
New Possibilities [a]	1.64 (1.30)	1.15 (1.49)	1.05 (1.90)	1.09 (1.74)
Personal Strength [a]	1.68 (1.75)	1.70 (1.57)	1.39 (1.46)	1.53 (1.62)
Spiritual Change [a]	1.48 (1.54)	1.13 (1.67)	1.44 (1.85)	1.88 (1.87)
Appreciation of Life [a]	2.02 (1.43)	1.95 (1.52)	1.84 (1.92)	2.13 (1.89)
Well-Being [b]				
Self-Esteem	6.85 (1.28)	6.88 (1.35)	7.13 (1.07)	7.14 (1.35)
Life Satisfaction	5.04 (1.00)	5.05 (1.26)	5.17 (.79)	5.11 (1.26)
Positive Affect	3.19 (.94)	3.28 (.90)	3.39 (.88)	3.45 (.84)
Negative Affect	1.87 (.77)	1.86 (.81)	1.93 (.83)	1.74 (.66)
Current Features				
Continued Consequences	3.78 (1.95)	3.78 (1.81)	4.82 (1.89)	5.31 (1.60)
Parallel Self	4.28 (1.45)	4.31 (1.28)	4.76 (1.50)	4.54 (1.56)
Change Event	4.95 (2.39)	5.49 (1.87)	5.64 (1.75)	5.29 (2.30)
Erase Event	4.71 (2.08)	5.44 (1.66)	4.94 (1.95)	5.17 (2.22)
Temporal Features				
Timeline Manipulation	13.87 (2.34)	9.29 (4.32)	14.35 (1.40)	9.74 (4.65)
Identity Overlap	5.00 (2.05)	4.84 (1.99)	4.81 (2.12)	4.43 (1.95)
Subjective Temporal Distance [c]	6.62 (3.13)	7.44 (3.59)	6.57 (3.88)	6.20 (3.07)

Note.   [a] Factors are difference scores created by subtracting decline items from corresponding growth items.
[b] Regardless of target person condition (self or other) participants reported on well-being for the self.
[c] Mean computed from two temporal distance items.

Table 27

Means and Standard Deviations of Measures (Self vs. Other)[a]

Measures	Self Means (SD)	Other Means (SD)
PTGDI		
Growth alone	3.50 (.99)	3.79 (.90) [†]
Decline alone	2.04 (.83)	2.22 (.87)
Growth &Decline difference score	1.44 (1.28)	1.60 (1.38)
Relating to Others [b]	1.26 (1.76)	1.84 (1.44) [†]
New Possibilities [b]	1.37 (1.42)	1.07 (1.81)
Personal Strength [b]	1.69 (1.64)	1.46 (1.54)
Spiritual Change [b]	1.28 (1.61)	1.67 (1.86)
Appreciation of Life [b]	1.98 (1.47)	1.99 (1.89)
Well-Being [c]		
Self-Esteem	6.87 (1.31)	7.13 (1.21)
Life Satisfaction	5.04 (1.14)	5.15 (1.05)
Positive Affect	3.24 (.91)	3.42 (.86)
Negative Affect	1.86 (.79)	1.83 (.73)
Past Features		
Intensity	5.98 (.91)	6.54 (.87) **
Valence (high very negative)	6.19 (.82)	6.43 (1.03)
Importance	5.93 (1.12)	6.26 (1.14) [†]
Affect	5.84 (1.13)	6.49 (1.03) *
Centrality of Event	3.89 (1.59)	4.92 (1.56) **
Current Features		
Continued Consequences	3.78 (1.86)	5.07 (1.76) **
Parallel Self	4.30 (1.35)	4.65 (1.72)
Change Event	5.24 (2.12)	5.46 (2.04)
Erase Event	5.11 (1.89)	5.06 (2.08)
Temporal Features		
Timeline Manipulation	11.39 (4.21)	12.01 (4.14)
Identity Overlap	4.92 (2.01)	4.61 (2.02)
Subjective Temporal Distance [d]	7.03 (3.40)	6.39 (3.46)

Note.   [a] Means with asterisks within rows are significantly different, ** p < .001, * p < .01, [†] p < .10

[b] Factors are difference scores created by subtracting decline items from corresponding growth items.

[c] Regardless of target person condition (self or other) participants reported on well-being for the self.

[d] Mean computed from two temporal distance items.

Table 28

Intercorrelations of Growth and Decline and Factors (Overall)

	1	2	3	4	5	6	7	8
1. Growth alone	-							
2. Decline alone	.04	-						
3. Growth & Decline difference score	.72**	-.64**	-					
4. Factor 1 – Relating to Others [a]	.62**	-.49**	.81**	-				
5. Factor 2 – New Possibilities [a]	.57**	-.51**	.78**	.39**	-			
6. Factor 3 – Personal Strength [a]	.46**	-.58**	.75**	.41**	.61**	-		
7. Factor 4 – Spiritual Change [a]	.55**	-.38**	.68**	.42**	.45**	.40**	-	
8. Factor 5 – Appreciation for Life [a]	.59**	-.58**	.84**	.62**	.64**	.58**	.58**	-

Note. [a] PTGDI Factors are difference scores
        ** p <.01

Table 29

Intercorrelations of Growth and Decline and Factors (Self condition)

	1	2	3	4	5	6	7	8
1. Growth alone	-							
2. Decline alone	.18	-						
3. Growth & Decline difference score	.68**	-.56**	-					
4. Factor 1 – Relating to Others [a]	.56**	-.43**	.79**	-				
5. Factor 2 – New Possibilities [a]	.53**	-.36**	.71**	.29**	-			
6. Factor 3 – Personal Strength [a]	.42**	-.55**	.76**	.36**	.59**	-		
7. Factor 4 – Spiritual Change [a]	.46**	-.29**	.56**	.26*	.37**	.35**	-	
8. Factor 5 – Appreciation for Life [a]	.57**	-.47**	.82**	.52**	.61**	.59**	.58**	-

Note. [a] PTGDI Factors are difference scores
   ** p <.01, * p <.05

Table 30

Intercorrelations of Growth and Decline and Factors (Other condition)

	1	2	3	4	5	6	7	8
1. Growth alone	-							
2. Decline alone	-.18	-						
3. Growth & Decline difference score	.78**	-.76**	-					
4. Factor 1 – Relating to Others [a]	.69**	-.65**	.87**	-				
5. Factor 2 – New Possibilities [a]	.66**	-.64**	.84**	.56**	-			
6. Factor 3 – Personal Strength [a]	.56**	-.62**	.77**	.53**	.65**	-		
7. Factor 4 – Spiritual Change [a]	.64**	-.51**	.76**	.62**	.54**	.48**	-	
8. Factor 5 – Appreciation for Life [a]	.64**	-.68**	.86**	.78**	.66**	.58**	.58**	-

Note. [a] PTGDI Factors are difference scores

** p < .01

Table 31

Mean Comparison of Growth and Decline Means to Values of no change or in relation to Decline

	PTGDI Growth Means [a]	PTGDI Decline Means [a]	PTGDI Difference Score [b]
Overall	3.63 (.96)**	2.12 (.85)**	1.51 (1.32)**
Factor 1 Relating to Others	3.69 (1.15)**	2.16 (1.01)**	1.52 (1.34)**
Factor 2 New Possibilities	3.36 (1.20)**	2.13 (1.01)**	1.23 (1.32)**
Factor 3 Personal Strength	3.91 (1.04)**	2.30 (1.01)**	1.59 (1.59)**
Factor 4 Spiritual Change	3.05 (1.33)**	1.74 (1.02)**	1.46 (1.74)**
Factor 5 Appreciation of Life	4.08 (1.32)**	2.11 (1.05)**	1.99 (1.67)**

Note. [a] Means were tested against the value of 1 (no change)
[b] PTGDI difference scores were tested against the value of 0 (no growth over decline or no change)
** $p < .001$

Table 32

Percentage of Reported Growth and Decline

	Overall		
	% Growth	% no change	% Decline
Growth alone	95%	5%	-
Decline alone	-	51%	49%
Growth & Decline difference score	67%	23%	10%
Factor 1 Relating to Others [a]	65%	19%	16%
Factor 2 New Possibilities [a]	59%	27%	14%
Factor 3 Personal Strength [a]	67%	20%	13%
Factor 4 Spiritual Change [a]	61%	27%	12%
Factor 5 Appreciation of Life [a]	77%	13%	10%

Note. [a] Growth reported for variables are in relation to decline, '% no change' for difference scores can either indicate that participants reported 'no change' OR reported equal amounts of growth and decline.

Table 33

Mean Comparison of Growth and Decline Means to Values of no change or in relation to Decline for Self vs. Other condition

	Self			Other		
	PTGDI Growth Means [a]	PTGDI Decline Means [a]	PTGDI Difference Score [b]	PTGDI Growth Means [a]	PTGDI Decline Means [a]	PTGDI Difference Score [b]
Overall	3.50 (.99)**	2.04 (.83)**	1.44 (1.28)**	3.79 (.90)**	2.22 (.87)**	1.60 (1.38)**
Factor 1 Relating to Others	3.49 (1.25)**	2.21 (1.07)**	1.26 (1.76)**	3.92 (.98)**	2.10 (.94)**	1.84 (1.44)**
Factor 2 New Possibilities	3.29 (1.21)**	1.91 (.87)**	1.37 (1.42)**	3.46 (1.20)**	2.39 (1.10)**	1.07 (1.81)**
Factor 3 Personal Strength	3.88 (1.10)**	2.17 (1.05)**	1.69 (1.64)**	3.96 (.98)**	2.45 (.95)**	1.46 (1.54)**
Factor 4 Spiritual Change	2.90 (1.36)**	1.70 (1.06)**	1.28 (1.61)**	3.23 (1.28)**	1.79 (.97)**	1.67 (1.86)**
Factor 5 Appreciation of Life	3.91 (1.35)**	1.97 (.93)**	1.98 (1.47)**	4.28 (1.27)**	2.29 (1.17)**	1.99 (1.89)**

Note. [a] Means were tested against the value of 1 (no change)
[b] PTGDI difference scores were tested against the value of 0 (no growth over decline or no change)
** p < .001

Table 34

Percentage of Reported Growth and Decline for Self vs. Other condition

	Self			Other		
	% Growth	% no change	% Decline	% Growth	% no change	% Decline
Growth alone	90%	10%	-	100%	0%	-
Decline alone	-	55%	45%	-	46%	54%
Growth & Decline difference score	69%	20%	11%	65%	26%	9%
Factor 1 Relating to Others [a]	60%	21%	19%	71%	17%	12%
Factor 2 New Possibilities [a]	64%	25%	11%	53%	29%	18%
Factor 3 Personal Strength [a]	72%	15%	13%	62%	26%	12%
Factor 4 Spiritual Change [a]	61%	29%	10%	61%	24%	15%
Factor 5 Appreciation of Life [a]	79%	12%	9%	73%	15%	12%

Note. [a] Growth reported for variables are in relation to decline, '% no change' for difference scores can either indicate that participants reported 'no change' OR reported equal amounts of growth and decline.

Table 35

Correlations of Growth and Growth controlling for Decline with Well-Being Measures for Self condition

| | Growth Alone/Growth Controlling for Decline [a] | | | |
	Life Satisfaction	Positive Affect	Negative Affect	Self Esteem
Overall	.17/ .20†	.22*/.29**	.03/ -.11	-.03/ .08
Factor 1: Relating to Others	.12/ .14	.23*/.28**	.02/ -.09	-.05/ .02
Factor 2: New Possibilities	.11/ .15	.14/ .20†	.02/ -.15	.02/ .15
Factor 3: Personal Strength	.28**/.28**	.22*/ .24*	-.08/-.11	.12/ .15
Factor 4: Spiritual Change	-.02/ .03	.06/ .13	.18/ .00	-.22*/-.11
Factor 5: Appreciation of Life	.14/ .14	.16/ .20†	.01/ -.02	-.02/ .02

Note. [a] Correlations and Partial Correlations are presented Growth alone/Growth controlling for Decline respectively within each column.

** p < 0.01, * p < 0.05, † p < 0.09

Table 36

Correlations of Growth and Decline with Well-Being Measures for Self condition

	Life Satisfaction	Positive Affect	Negative Affect	Self Esteem
Growth alone	.17	.22*	.03	-.03
Decline alone	-.23*	-.17	.60**	-.47**
Growth & Decline difference score	.25*	.27*	-.39**	.25*
Factor 1: Relating to Others [a]	.12	.28*	-.28*	.11
Factor 2: New Possibilities [a]	.27*	.17	-.32*	.36**
Factor 3: Personal Strength [a]	.39**	.26*	-.45**	.38**
Factor 4: Spiritual Change [a]	.12	.06	-.11	.12
Factor 5: Appreciation of Life [a]	.25*	.24*	-.33*	.30**

Note.   [a] PTGDI factors are difference scores
        ** $p < 0.01$, * $p < 0.05$, [†] $p < 0.08$

Table 37

Summary of Regression Analysis for Variables Predicting Well-Being for the Self condition (N =83)

	Life Satisfaction			Positive Affect			Negative Affect			Self Esteem			Positive Outcome [a]		
	β	p	R^2	β	p	R^2	β	p	R^2	β	p	R^2	β	p	R^2
Separate Regressions															
Growth alone [b]	.18	.13	.03	.22	.05	.05	.03	.77	.001	-.03	.82	.001	.10	.36	.01
Decline alone [b]	-.23	.04	.05	-.17	.12	.03	.60	<.001	.36	-.47	<.001	.22	-.46	<.001	.22
Step 1			.10			.10			.37			.23			.25
Growth controlling for Decline [c]	.21	.06		.26	.02		-.09	.34		.06	.55		.19	.057	
Decline controlling for Growth [c]	-.26	.02		-.22	.05		.62	<.001		-.48	<.001		-.50	<.001	
Step 2			.13			.12			.46			.30			.33
Growth X Decline [c]	.77	.09		.70	.13		-1.27	.001		1.14	.006		1.20	.003	

Note. [a] Positive Outcome is a composite of life satisfaction, positive and negative affect, and self-esteem standardized means. [b] Separate regression analyses were conducted to examine the contribution of growth and decline alone. [c] A regression analysis was conducted with growth and decline in one step and the interaction in another step.

Table 38

Correlations between Growth and Past Features

	Growth alone/Growth controlling for Decline [a]				
	Intensity	Valence	Importance	Affect	Centrality of Event
Overall	.21**/.21**	.13/.13	.21**/.21**	.21**/.21**	.36**/.36**
Factor 1: Relating to Others	.16*/.17*	.14†/.14†	.18*/.19*	.22**/.22**	.34**/.34**
Factor 2: New Possibilities	.07/.07	.04/.04	.12/.13	.14†/.14†	.19*/.19*
Factor 3: Personal Strength	.11/.10	.01/.01	.17*/.16*	.06/.05	.20*/.23**
Factor 4: Spiritual Change	.22**/.23**	.15†/.16*	.16*/.17*	.19*/.19*	.36**/.34**
Factor 5: Appreciation of Life	.34**/.34**	.14†/.13	.25**/.24**	.28**/.27**	.35**/.40**

Note.   [a] Correlations and Partial Correlations are presented Growth alone/Growth controlling for Decline respectively within each column.
** p < 0.01, * p < 0.05, † p < 0.1

Table 39

Correlations of Growth and Decline with Past Features

			Overall			
	Intensity	Valence	Importance	Affect	Centrality of Event
Growth alone	.21**	.13	.21*	.21**	.36**
Decline alone	-.09	-.01	-.06	-.02	.29**
Growth & Decline difference score	.23**	.10	.24**	.22**	.10
Factor 1: Relating to Others [a]	.18*	.08	.19*	.21**	.15†
Factor 2: New Possibilities [a]	.07	-.01	.11	.01	-.09
Factor 3: Personal Strength [a]	.06	.06	.13	.06	-.02
Factor 4: Spiritual Change [a]	.32**	.15†	.09	.15†	.12
Factor 5: Appreciation of Life [a]	.30**	.16*	.25**	.20*	.12

Note.   [a] PTGDI factors are difference scores
        ** $p < 0.01$, * $p < 0.05$, † $p < 0.08$

Table 40
Correlations and Partial Correlations between Growth and Past Features for Self vs. Other condition

	Growth Alone/Growth Controlling for Decline [a]				
	Intensity	Valence	Importance	Affect	Centrality of Event
Self					
Overall	.10/ .10	.05/ .04	.16/ .18	.18/ .18	.32**/.27**
Factor 1: Relating to Others	.02/ .02	.03/ .03	.13/ .14	.16/ .16	.25*/ .22*
Factor 2: New Possibilities	.04/ .03	.03/ .03	.07/ .09	.17/ .17	.22*/ .16
Factor 3: Personal Strength	.10/ .10	-.03/-.03	.12/ .12	.07/ .07	.16/ .17
Factor 4: Spiritual Change	.07/ .06	.04/ .03	.13/ .16	.11/ .11	.34**/.27*
Factor 5: Appreciation of Life	.25*/ .25*	.09/ .09	.26*/.26*	.26*/.26*	.34**/.35**
Other					
Overall	.28*/ .24*	.18/ .17	.23*/.22†	.19/ .17	.35**/.39**
Factor 1: Relating to Others	.25*/ .24*	.24*/.24*	.20†/ .20	.21†/.20	.39**/.41**
Factor 2: New Possibilities	.06/ .01	.03/ .02	.17/ .16	.07/ .05	.13/ .15
Factor 3: Personal Strength	.10/ .04	.04/ .02	.22†/.21†	.01/ -.02	.25*/ .29*
Factor 4: Spiritual Change	.36**/.35**	.24*/.24*	.17/ .16	.24*/.23†	.35**/.37**
Factor 5: Appreciation of Life	.41**/.35**	.16/ .14	.20/ .18	.23†/.20†	.32**/.38**

Note.   [a] Correlations are presented Growth alone/Growth controlling for Decline respectively within each column.
** $p < 0.01$, * $p < 0.05$, † $p < 0.1$

Table 41

Correlations of Growth and Decline with Past Features for Self vs. Other condition

	Self/Other [a]				Centrality of Event
	Intensity	Valence	Importance	Affect	
Growth alone	.10/ .28*	.05/ .18	.16/ .23*	.18/ .19	.32**/ .35**
Decline alone	.04/ -.33**	.03/ -.08	-.07/ -.08	.00/ -.12	.37**/ .16
Growth & Decline difference score	.09/ .40**	.01/ .17	.25*/ .21†	.22*/ .20†	.05/ .13
Factor 1: Relating to Others [b]	-.05/ .43**	-.06/ .20	.18/ .15	.14/ .22†	.04/ .20
Factor 2: New Possibilities [b]	.05/ .15	-.03/ .03	.06/ .18	.03/ .04	-.08/ -.05
Factor 3: Personal Strength [b]	.01/ .19	-.01/ .16	.11/ .18	.06/ .11	-.12/ .15
Factor 4: Spiritual Change [b]	.17/ .45**	.13/ .14	.09/ .08	.05/ .22†	.06/ .12
Factor 5: Appreciation of Life [b]	.22*/ .42**	.09/ .21†	.18/ .33**	.17/ .26*	.02/ .23*

Note.　[a] Correlations are presented Self/Other respectively within each column.
　　[b] PTGDI factors are difference scores
　　** p < 0.01, * p < 0.05, † p < 0.1

Table 42

Correlations between Growth and Current Features

	Growth Alone/Growth Controlling for Decline [a]			
	Continued Consequences	Parallel Self	Change Event	Erase Event
Overall	.12/ .12	-.02/-.02	-.03/-.02	-.13/ -.09
Factor 1: Relating to Others	.22**/.22**	.06/ .05	.07/ .08	.01/ .03
Factor 2: New Possibilities	-.11/ -.11	-.12/-.13	-.16*/-.16*	-.26**/-.25**
Factor 3: Personal Strength	.00/ .03	-.05/-.03	-.13/ -.11	-.17*/ -.14†
Factor 4: Spiritual Change	.23**/.22**	-.03/-.06	.03/ .02	.02/ .02
Factor 5: Appreciation of Life	.13/ .15†	.03/ .05	.11/ .14†	-.00/ .03

Note. [a] Correlations and Partial Correlations are presented Growth alone/Growth controlling for Decline respectively within each column.
** $p < 0.01$, * $p < 0.05$, † $p < 0.09$

Table 43

Correlations of Growth and Decline with Current Features

	Overall			
	Continued Consequences	Parallel Self	Change Event	Erase Event
Growth alone	.12	-.02	-.03	-.11
Decline alone	.21*	.22**	.14[†]	.11
Growth & Decline difference score	-.04	-.16*	-.09	-.15[†]
Factor 1: Relating to Others [a]	.14[†]	-.02	.04	.01
Factor 2: New Possibilities [a]	-.30**	-.21**	-.26**	-.31**
Factor 3: Personal Strength [a]	-.13	-.18*	-.19*	-.20*
Factor 4: Spiritual Change [a]	.01	-.14[†]	-.09	-.11
Factor 5: Appreciation of Life [a]	-.06	-.14[†c]	-.06	-.12

Note.   [a] PTGDI factors are difference scores
       ** p < 0.01, * p < 0.05, [†] p < 0.1

Table 44
Correlations and Partial Correlations between Growth and Current Features for Self vs. Other condition

	Growth Alone/Growth Controlling for Decline [a]			
	Continued Consequences	Parallel Self	Change Event	Erase Event
Self				
Overall	.05/ .01	-.06/ -.10	-.03/ -.02	-.11/ -.08
Factor 1: Relating to Others	.18†/ .17	.08/ .07	.08/ .10	.05/ .09
Factor 2: New Possibilities	-.16/ -.23*	-.19†/ -.24*	-.16/ -.18	-.26*/ -.26*
Factor 3: Personal Strength	-.05/ -.03	-.19†/ -.20†d	-.23*/ -.21†e	-.29**/ -.25*
Factor 4: Spiritual Change	.16/ .08	-.01/ -.07	.09/ .08	.09/ .08
Factor 5: Appreciation of Life	.03/ .02	.00/ -.01	.14/ .17	.01/ .03
Other				
Overall	.11/ .12	-.01/ .03	-.06/ -.03	-.12/ -.10
Factor 1: Relating to Others	.15/ .15	-.02/ -.00	.02/ .03	-.04/ -.03
Factor 2: New Possibilities	-.11/ -.10	-.06/ -.03	-.16/ -.15	-.26*/ -.25*
Factor 3: Personal Strength	.05/ .06	.11/ .16	-.01/ .02	-.04/ -.01
Factor 4: Spiritual Change	.28*/ .28*	-.08/ -.06	-.07/ -.06	-.05/ -.03
Factor 5: Appreciation of Life	.18/ .19	.02/ .09	.04/ .09	-.01/ .03

Note. [a] Correlations are presented Growth alone/Growth controlling for Decline respectively within each column. ** $p < 0.01$, * $p < 0.05$, † $p < 0.1$

Table 45

Correlations of Growth and Decline with Current Features for Self vs. Other condition

	Self/Other[a]			
	Continued Consequences	Parallel Self	Change Event	Erase Event
Growth alone	.05/ .11	-.06/ -.01	-.03/ -.06	-.11/ -.12
Decline alone	.31**/.03	.20†/ .22†	.12/ .15	.09/ .14
Growth & Decline difference score	-.14/ .05	-.19†/ -.15	-.05/ -.15	-.10/ -.19
Factor 1: Relating to Others[b]	.07/ .12	.01/ -.13	.09/ -.06	.06/ -.06
Factor 2: New Possibilities[b]	-.42**/-.17	-.31**/-.12	-.32**/-.21†	-.34**/-.30*
Factor 3: Personal Strength[b]	-.23*/ .03	-.29**/-.05	-.25*/ -.11	-.30**/-.10
Factor 4: Spiritual Change[b]	-.17/ .12	-.14/ -.17	-.04/ -.17	-.01/ -.19
Factor 5: Appreciation of Life[b]	-.29**/.17	-.16/ -.12	-.05/ -.06	-.13/ -.12

Note. [a] Correlations are presented Self/Other respectively within each column.
[b] PTGDI factors are difference scores
** $p < 0.01$, * $p < 0.05$, † $p < 0.1$

Table 46

Correlations between Growth and Temporal Features

	Growth alone/Growth controlling for Decline [a]		
	# of Months Since	Identity Overlap	Temporal Distance
Overall	.11/ .13	-.18*/-.20*	.04/ .05
Factor 1: Relating to Others	.05/ .06	-.13/ -.13	-.01/ .00
Factor 2: New Possibilities	.09/ .11	-.19*/-.21**	.10/ .12
Factor 3: Personal Strength	.10/ .11	-.14†/-.15†	.07/ .06
Factor 4: Spiritual Change	.16*/.18*	-.10/ -.11	-.04/-.03
Factor 5: Appreciation of Life	.10/ .12	-.15†/ -.17*	-.02/-.01

Note.   [a] Correlations and Partial Correlations are presented Growth alone/Growth controlling for Decline respectively within each column.
** $p < 0.01$, * $p < 0.05$, † $p < 0.1$

Table 47

Correlations of Growth and Decline with Temporal Features

	# of Months Since	Overall Identity Overlap	Temporal Distance
Growth alone	.11	-.18*	.04
Decline alone	.07	-.08	.02
Growth & Decline difference score	.03	-.10	-.01
Factor 1: Relating to Others [a]	-.01	-.05	-.05
Factor 2: New Possibilities [a]	.03	-.13	.07
Factor 3: Personal Strength [a]	.09	-.04	.05
Factor 4: Spiritual Change [a]	.07	-.10	-.01
Factor 5: Appreciation of Life [a]	.03	-.07	.00

Note. [a] PTGDI factors are difference scores

* $p < 0.05$

Table 48

Correlations and Partial Correlations between Growth and Temporal Features for Self vs. Other condition

	Growth Alone/Growth Controlling for Decline [a]		
	# of Months Since	Identity Overlap	Temporal Distance
Self			
Overall	.27*/ .27**	-.20†/ -.19†	.27*/. 30**
Factor 1: Relating to Others	.13/ .13	-.09/ -.08	.14/ .16
Factor 2: New Possibilities	.27*/ .28**	-.24*/-.23*	.30**/.33**
Factor 3: Personal Strength	.14/ .14	-.13/ -.14	.27**/.27**
Factor 4: Spiritual Change	.28**/.29**	-.17/ -.16	.14/ .18
Factor 5: Appreciation of Life	.35**/.35**	-.18/ -.18	.20†/ .22*
Other			
Overall	-.07/ -.00	-.13/ -.17	-.26*/ -.22†
Factor 1: Relating to Others	-.06/ -.02	-.16/ -.18	-.21†/ -.18
Factor 2: New Possibilities	-.09/ -.04	-.12/ -.15	-.14/ -.10
Factor 3: Personal Strength	.06/ .10	-.14/ -.17	-.21†/ -.20
Factor 4: Spiritual Change	.04/ .10	.02/ -.01	-.26*/ -.24*
Factor 5: Appreciation of Life	-.16/ -.11	-.09/ -.13	-.28*/ -.24†

Note. [a] Correlations are presented Growth alone/Growth controlling for Decline respectively within each column. ** $p < 0.01$, * $p < 0.05$, † $p < 0.1$

Table 49

Correlations of Growth and Decline with Temporal Features for Self vs. Other condition

| | Self/Other [a] | | |
	# of Months Since	Identity Overlap	Temporal Distance
Growth alone	.27*/-.07	-.20†/-.13	.27*/ -.26*
Decline alone	-.01/ .14	-.11/-.03	-.07/ .15
Growth & Decline difference score	.22*/-.15	-.10/-.08	.21*/ -.26*
Factor 1: Relating to Others [b]	.10/ -.16	.01/ -.12	.12/ -.26*
Factor 2: New Possibilities [b]	.23*/-.13	-.16/-.11	.29**/-.17
Factor 3: Personal Strength [b]	.17/ .01	-.07/-.01	.22*/ -.20
Factor 4: Spiritual Change [b]	.21†/-.05	-.19/ .00	.16/ -.18
Factor 5: Appreciation of Life [b]	.31**/-.19	-.13/-.02	.29*/ -.28*

Note. [a] Correlations are presented Self/Other respectively within each column.
  [b] PTGDI factors are difference scores
 ** $p < 0.01$, * $p < 0.05$, † $p < 0.08$
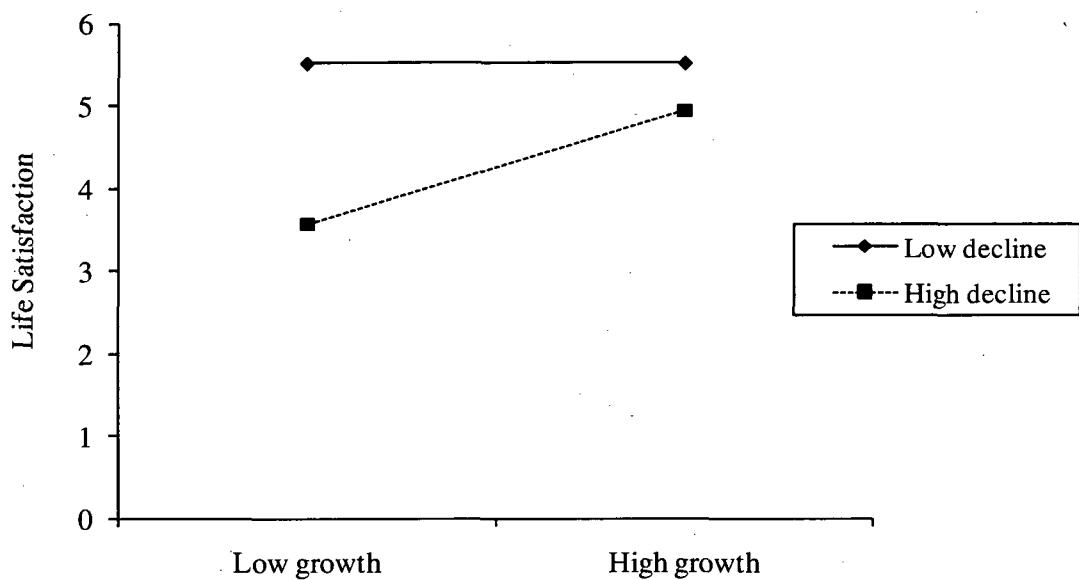
Figure 1: Graph of the relation of growth and decline with life satisfaction (Study 1)
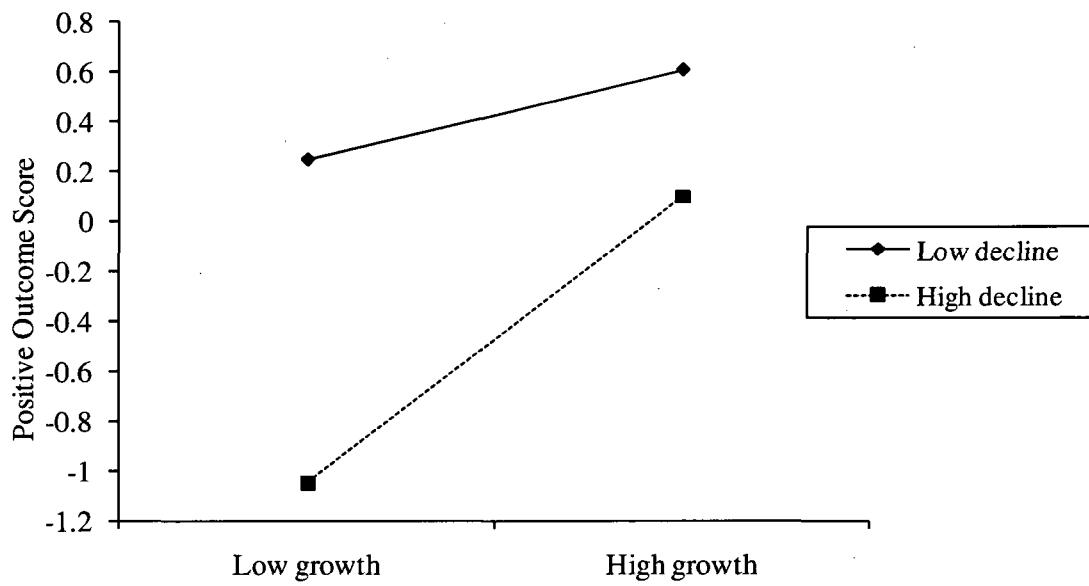
Figure 2: Graph of the relation of growth and decline with composite of positive outcome
*(Study 2)*
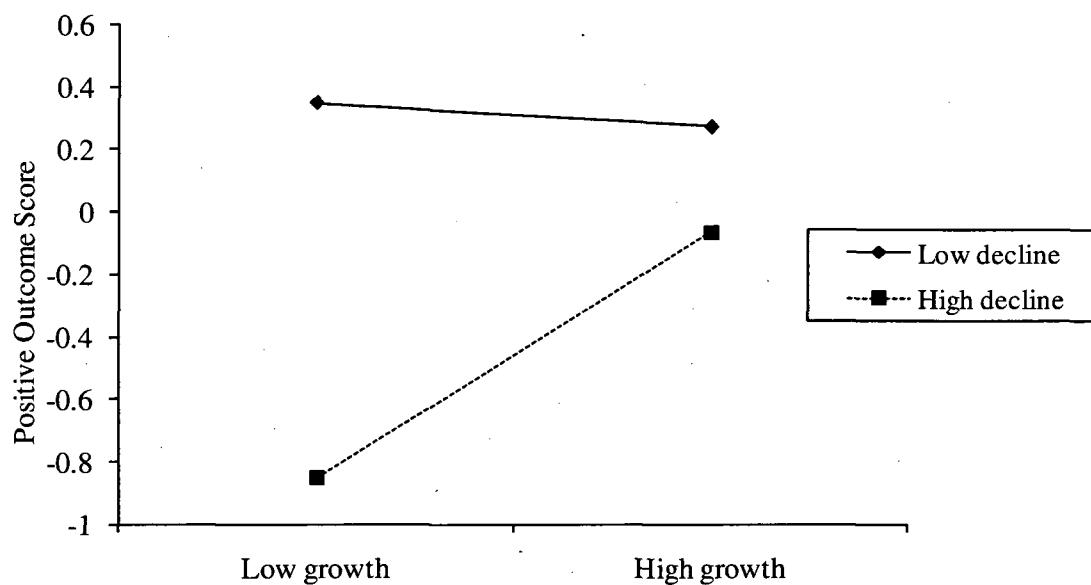
Figure 3: Graph of the relation of growth and decline with composite of positive outcome (Self condition; Study 3)