Promoting Change in Posttraumatic Growth Research: Response to Commentaries

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Abstract

We are confident that researchers who take note of the suggestions raised by the commentaries will greatly advance the study of post-traumatic growth. Our response focuses on four broad issues – the exact nature of post-traumatic growth, the role of "traumatic" experiences, methodological improvements for future research, and why it really does matter whether retrospective perceptions of post-traumatic growth reflects genuine change. We hope that our target article and the discussion it has generated will inspire rigorous research into the positive outcomes that may follow from experiencing trauma and adversity.

Promoting Change in Post-traumatic Growth Research:

Response to Commentaries

We begin by thanking all of the authors who contributed commentaries to our target article on post-traumatic growth. Each author offered a unique perspective on the construct and a novel solution to the conceptual and methodological challenges currently faced by researchers in this field. We are confident that researchers who take note of these suggestions will greatly advance the study of post-traumatic growth. In reading through and absorbing all of the rich and informative commentaries, we identified some reoccurring themes. We will therefore organize our response around four broad issues – clarification of the definition of post-traumatic growth, the role of traumatic experiences in post-traumatic growth, methodological improvements for future research, and why it really does matter whether retrospective perceptions of post-traumatic growth reflects genuine change. Readers interested in a summary of the commentators' views and our response may refer to Table 1. It is our hope that our target article and the discussion it has generated will inspire continued and rigorous research into the positive outcomes that may follow from experiencing trauma and adversity.

Just what is post-traumatic growth? Toward greater theoretical clarification:

Several authors focused (either directly or indirectly) on issues surrounding the definition of post-traumatic growth. In our target article (Jayawickreme & Blackie, this issue) we discussed the many conceptualizations that have been put forward, which include the manifestation of five specific changes (Tedeschi & Calhoun, 2004), an increase in eudaimonic well-being (Joseph & Linley, 2005), and the restructuring of a person's life narrative (McAdams, 2006). However, as pointed out by Miller (this issue) there are a number of unresolved issues that are likely to affect all of these definitions. Miller raised several concerns about how post-traumatic growth is

defined and evaluated, and he encouraged us (and other researchers) to further refine our own definition of post-traumatic growth as positive personality change. In this section, we will try to shed some light on these complicated issues.

Miller's first concern is whether the evaluative criteria, or what counts as positive change should be defined by the survivor or the researcher. We argue for "all of the above"– both parties should define it. Tedeschi and Calhoun (1996) did therefore make a significant contribution by articulating their five outcomes on the basis of interviews with survivors who had experienced severe physical disability and bereavement. It is however, for researchers to decide whether the outcomes identified by the survivors are distinct constructs, or are instead captured by existing constructs. As Joseph (this issue) argued, there may be value to conceptualizing post-traumatic growth in terms of other well-recognized and researched constructs. Such a process may grant researchers more insight into the functional value of post-traumatic growth. For example, if we all agree that a core aspect of post-traumatic growth is self-efficacy, then we can draw upon past research on self-efficacy to gain valuable information on how post-traumatic growth is related to important life outcomes (e.g., Multon, Brown, & Lent, 1991; Strecher, DeVellis, Becker, & Rosenstock, 1986).

Miller also called for further clarity on the number and magnitude of positive changes that are considered sufficient to count as post-traumatic growth. He queried whether identifying one change was sufficient to constitute growth, even if other aspects of the person's life have deteriorated since the event. This is both a valuable point and an important issue, and yet one of the most complicated to address. This may be in part because post-traumatic growth has been defined as both a process and an outcome (Tedeschi & Calhoun, 2004). For example, an individual who is reminded of the importance of her family relationships is said to have

experienced post-traumatic growth, and yet this realization may also be the precursor for further growth such as a change in career path to allow more time with her family. This example illustrates another issue - how do researchers separate out positive changes from the outcomes they may predict? The definition of post-traumatic growth as positive psychological change is too broad to allow researchers to truly distinguish the boundaries between the construct itself and associated outcomes.

These are challenging issues to tackle, and deserve very careful consideration by the researchers in our field. While we are hesitant to provide a definite answer at this stage, it does seem clear to us that the existing definition of post-traumatic growth is limited in that it conflates the process of identifying positive change such as a shift in life priorities with the associated outcomes that may result from identifying changes (Tennen & Affleck, 2002). Thus, it may therefore be fruitful to separate out process variables from outcome variables and use distinct terms. The term benefit finding (Tomich & Helgeson, 2004) may be most appropriate to describe the *process* that an individual undergoes when identifying how she has changed, whereas the term "post-traumatic growth" may be best reserved for determining the extent to which these benefits have *translated* into higher cognitive functioning and behavior. Of course, a critical reviewer could argue that we have side-stepped and simply relabeled the definitional issue altogether. Indeed, she would be correct, if we fail to identify what we mean by higher cognitive functioning and associated behaviors. At this point, we refer to suggestions made by both Robinson (this issue) and Damian and Roberts (also this issue) who speculated that cognitive complexity, morality, and creative achievement are all relevant criteria with which to determine growth outcomes. Similarly, we believe that the evaluative criteria for growth as positive personality change should be higher-order constructs that represent a change in how the

individual sees and interacts with the world. We further propose that wisdom, maturity, and creativity may be possible contenders.

With post-traumatic growth outcomes more clearly defined, we would now like to return to a central question we posted in our target article – is personality change following trauma cognitive *or* behavioral? Roepke, Forgeard, and Elstein (this issue) questioned the 'either-or' dichotomy that they claim we presented, and encouraged us to interpret behavioral change in light of associated changes in cognitive processes. It is important to mention that we did not intend to imply that the cognitive changes associated with post-traumatic growth are of little significance. We agree with Roepke et al. that changes to an individual's behavior following trauma are likely to be a product of how she reinterprets and assigns meaning to her life post-trauma (Park, 2010). Furthermore, some of the post-traumatic growth outcomes that we outlined in the previous paragraph are cognitive in nature – wisdom, cognitive complexity, and maturity. With that said, we do believe that enduring change is more likely to be sustained over time if these cognitive processes are translated into meaningful behaviors. In order to demonstrate this point, we'll turn to our example of the woman who realizes the importance of prioritizing her family. It is possible that the realization alone would provide an increase in well-being, but if this realization did not make her prioritize her family over her work, did she really grow? The realization alone may simply reflect a fleeting shift in values, which may not be sustained over the longer-term when the woman returns to work and succumbs to the pressures of her career. Additionally, we argue that successful interventions should focus on behaviors as well as cognitions (Blackie, Roepke, Forgeard, Jayawickreme, & Fleeson, 2014; see also Magidson, Roberts, Collado-Rodriguez, & Lejuez, 2014).

The study of post-traumatic growth also calls for an examination of the broader context behind reports of positive change (or benefits). To determine if a survivor has truly grown, there must be meaningful improvements in their mental health, cognitive functioning, or behavior. So far, and in the broader literature, post-traumatic growth has been viewed as a psychological construct. However, it is important to keep in mind that there are underlying biological processes that will support (or in some cases undermine) psychosocial adjustment. Additionally, biological processes may react negatively to poor psychosocial adjustment. For example, the trajectories of psychosocial adjustment in resilient adolescents under conditions of high SES-risk have been associated with poorer physiological health (Brody, Yu, Chen, Miller, Kogan, & Beach, 2013). Thus, if we view post-traumatic growth simply as a psychological phenomenon we may not take into account these physiological processes and the long-term impact of physiological depreciation on the trajectory of psychosocial adjustment[1].

We end this section by returning to our definition of post-traumatic growth as positive personality change. There were several authors who raised reasonable challenges to our definition, and called for further clarity on how it diverged from past conceptualizations. Kreitler (this issue), for example, asked whether personality change is the relevant term when individuals suffering from distress are striving for improvements in their well-being. We agree that the person who is suffering is not striving to attain personality change, but is instead more concerned with overcoming the pain caused by a trauma (although personality change could result from efforts to overcome the pain associated with the trauma). We define personality in this context more broadly than fixed traits, and argue that personality change represents an enduring shift in the way people think, feel, and behave following a traumatic event. Such a definition is arguably

[1] Thanks to Eric Thibodeau for this comment.

most congruent with the definition of traits provided by Fleeson (2001) and Buss and Craik (1983), in which traits are defined in terms of the frequency with which individuals perform acts representative of that trait (Fleeson, 2012; Jayawickreme, Meindl, Helzer, Furr & Fleeson, 2014; but see McAdams & Adler, 2006, for an alternative perspective). Our central argument is that post-traumatic growth has been conceptualized in terms of positive personality change by past research (e.g., Park, 2010; Joseph & Linley, 2005; Tedeschi & Calhoun, 2004), but it has not been measured accordingly. If post-traumatic growth captures an enduring shift in how someone thinks, feels, and behaves, then we should also be measuring it as a change in personality over time by operatizing appropriate current-standing scales. We additionally agree with Kandler and Specht (this issue) that post-traumatic growth may not initially be observed as a change in dispositional traits, but instead may be observed in a shift in other levels of personality such as personal concerns (e.g., goals and priorities in life), and life narratives (for a review see McAdams, 1994), which should eventually facilitate increases or decreases in dispositional traits.

Is trauma the essential ingredient for post-traumatic growth?

The role of trauma or more precisely the necessity of a traumatic experience to attain post-traumatic growth was another issue debated by many of our contributing authors (Luhmann, this issue; Kandler & Specht, this issue; Seery & Kondrak, this issue). These authors all asked a compelling and thought-provoking question – does trauma really result in a special form of growth, which is not fostered by other non-normative and adverse events (e.g., divorce)? This question calls for more rigorous research to determine whether the mechanisms and event-specific characteristics underlying post-traumatic growth are really distinct from other distressing, and non-normative events. However, before we engage in this discussion, we believe that it will be helpful to set the stage by presenting some of the issues faced by clinicians when

attempting to define trauma. It is likely that this issue concerning the mechanisms and event-specific characteristics of post-traumatic growth are in part derived from the complexity of defining what actually constitutes a traumatic event.

Weathers and Keane (2007) provide a comprehensive overview of the challenges faced by clinicians when trying to distinguish ordinary stressors from more traumatic stressors. For a start the term *stressor* encompasses several dimensions, including severity, frequency, duration, predictability, and controllability. As a result, there are no clear-cut boundaries that can easily distinguish ordinary stressors from traumatic ones, and the definitions proposed by clinicians and the Diagnostic and Statistical Manual of Mental Disorders represent an attempt to categorize and objectify a uniquely subjective experience. According to the definition specified in the latest edition of the Diagnostic and Statistical Manual of Mental Disorders (DSM-V; American Psychiatric Association, 2013) trauma refers to exposure - experienced, witnessed, learned that a close family member or friend experienced, or exposed to while in the line of work – an event that involved actual (or threatened) death, serious injury or sexual violation. Some examples of traumatic events in the DSM-V are exposure to war as a combatant or civilian, physical assault, abusive sexual contact, and natural or human-made disasters (p. 274). These examples function as guidelines with which to classify an event as traumatic, but the trauma classification also requires that a clinician makes a call on the extent to which the event was sudden, unexpected, and catastrophic. Thus, as nicely summarized by Kandler and Specht (this issue) and Damian and Roberts (this issue) post-traumatic growth research that relies on clinical checklists to define trauma will sometimes be unable to establish that the event was subjectively traumatic to the participant.

Taking the challenges of defining trauma into account, can we still maintain that trauma is a necessary ingredient for growth? We are inclined to agree with Seery and Kondrak (this issue) on this point: it seems reasonable to assume that traumas are simply severe stressors and as such will rely upon the same set of coping mechanisms as adverse and non-traumatic stressors (e.g., divorce, job loss, and loss of a grandparent). None of the examples given would qualify as a trauma if we apply the strict and objective definition – as they did not threaten the individual's life or cause serious injury or sexual violation. However, it does seem plausible that these events may lead an individual to reevaluate their life, and identify places that could be improved. For example, the individual who lost their job may become more open to experience and find a new passion.

To borrow terminology from Luhmann (this issue), traumatic and non-traumatic events are unlikely to be *quantitatively* different from one another in so far as both events may lead to personality change. Traumatic events may result in greater and more enduring personality change given the severity, but the underlying processes that facilitate personality change are likely to be the same in both cases. However, as Luhmann argued it is possible that traumatic and non-traumatic events differ *qualitatively* in so far as each event is triggered by unique event-related characteristics. This remains an intriguing and unexplored question, but we will end this section by discussing two possibilities that may warrant further research. Trauma may be unique from other stressors in so far as it is irreversible and a tangible mortality reminder. It seems possible; at least theoretically, that the irreversible nature of some tragic circumstances may push an individual to make enduring changes to their goals and priorities in life. For example, the sudden and unexpected loss of a spouse may motivate an individual to find ways to prioritize and appreciate their family, because she has learned not to take time for granted. Additionally, based

on experimental research that has demonstrated that even subtle mortality manipulations result in shifts to participants' thoughts, feelings, and goals (Cozzolino & Blackie, 2014; Cozzolino & Blackie, 2013; Vail et al., 2012; Blackie & Cozzolino, 2011), it seems possible that this is a characteristic unique to traumatic experiences. We caution, however, that goal change may not be a frequent outcome of traumatic life experiences. For example, 40% of participants coping with significant loss did not report changes in their life goals, and recovery from the loss experience was in fact associated with lack of goal change (Emmons, Colby, & Kaiser, 1998).

Methodological improvements for future research:

In our target article we argued that post-traumatic growth is defined as positive personality change in the literature (Jayawickreme & Blackie, this issue), but is not measured in accordance with this definition due to over-reliance on retrospective self-report measures of post-traumatic growth. We therefore proposed that the integration of post-traumatic growth research with personality science would offer researchers access to powerful methodologies with which to study this developmental process. Thus, we believe that it is of great importance that post-traumatic growth is examined as a trajectory of change over time, and researchers recognize that in the absence of extensive longitudinal studies we are only capturing the traumatic experience as a static point in time. In this section, we will respond to some of the concerns that were raised, and integrate the suggestions proposed by various authors into an actionable plan for future research.

Tedeschi, Addington, Cann, and Calhoun (this issue) were among the most critical of our approach and the distinction we drew between an individual's belief in positive change and actual positive change from pre-to-post trauma. They provided four reasons to counter our claim that the post-traumatic growth inventory (Tedeschi & Calhoun, 1996) is unable to provide

accurate assessments of change over time. We will evaluate each of these reasons, but before we do, we reiterate again that we did not claim that belief in change is an unworthy area of investigation. We maintain that a survivor's belief that they have changed since the trauma may be an important predictor of adaptive coping, improved mental health, and even actual post-traumatic growth over time. We argued instead that post-traumatic growth is defined as a developmental process and therefore measurement should primarily focus on state-level changes over time. It is the use of retrospective assessment as a proxy for actual growth that concerns us; especially given that participants' retrospective reports of personality trait change have poor agreement with prospective data documenting actual change (Robins, Noftle, Trzesniewski, & Roberts, 2005; Kirkpatrick & Hazan, 1994).

Tedeschi et al. argued that survivors can accurately describe their experience of post-traumatic growth, because they spontaneously report it, other people corroborate these self-reports, it is unrelated to measures of social desirability, and survivors tend to report positive and negative changes concurrently. However, none of these findings offer conclusive evidence that survivors' beliefs are accurate. The fact that survivors report post-traumatic growth spontaneously only demonstrates that they believe they have changed, and does not rule out the possibility that these reports actually reflect positive reappraisal strategies. Evidence that shows that other people can corroborate reports of post-traumatic growth is more convincing, but there are also a number of issues with this method. It is possible that the informant is susceptible to the same biases as the survivor, and reports seeing changes because, for example, she wants to believe her spouse is recovering better than should be expected. Also, while couples may agree on retrospective reports of change, their prospective reports of actual change over time do not show the same level of agreement (Karney & Frye, 2002). It is not surprising to us that

retrospective reports of post-traumatic growth are unrelated to measures of social desirability. We do not believe that participants are trying to deceive researchers, as illustrated by their willingness to also report the pain they are experiencing. Yet, these findings still only show that the survivor believes she has changed, not that she really has changed.

The retrospective measures of post-traumatic growth were a particularly valuable tool for establishing a new paradigm of research. Tedeschi and Calhoun (1996) made a significant contribution to shaping the field and attracting researchers to the fold. However, as Joseph (this issue) argues, the low correlations between retrospective and prospective assessments of post-traumatic growth (Frazier et al., 2009; Yanez, Stanton, Hoyt, Tennen, & Lechner, 2011) require that we consider perceptions of growth and actual growth as separate questions. It is important that future work systematically explores the relationship between these two assessments and the extent to which each assessment predicts unique processes and outcomes.

Frazier, Coyne, and Tennen (this issue) echo our sentiment for more careful and rigorous research into post-traumatic growth. They argue that we need less, but higher quality research that aims to validate the veracity of post-traumatic growth. The multi-trait multi-method (MTMM) approach they propose is ideally suited to answering some lingering questions, such as whether the existing retrospective and prospective instruments are assessing post-traumatic growth and the MTMM is easily integrated into longitudinal studies. Using this framework and the available data Frazier et al. argue that these assessments do not converge to assess the same trait - post-traumatic growth. This further fuels the need to investigate them as separate constructs and explore the differential relationships of each to growth-related outcomes. This approach would also allow researchers to investigate the extent to which constructs proposed to measure post-traumatic growth including life narratives, well-being, and personality traits

converge with each other. This approach is a valuable tool for refining the conceptualization of post-traumatic growth, and may resolve some of issues we outlined in the first section of this paper. Furthermore, in support of our recommendation to integrate the field with personality science, the MTMM approach has been applied to demonstrate that correlations between the Big Five traits are not due to artifacts of the instrument (DeYoung, 2006).

Continuing with the call for less, but higher quality research, Anusic and Yap (this issue) made a compelling case for the use of national panel surveys. Indeed, post-traumatic growth is a developmental process that unfolds over time, and therefore without suitably long intervals in between each assessment we can run the risk of making an arbitrary 'before' and 'after' distinction. Thus, we appreciate the practicality and simplicity of this approach. It affords many benefits: it offers access to representative national samples, minimizes the challenges associated with identifying relevant participant pools in sufficient numbers, collects pre-trauma baseline measures years prior to the trauma, and contains relevant comparison groups to separate out post-traumatic growth from normative personality change. We fully agree that these designs would advance the study of this topic, and broaden the scope of what types of trauma promote post-traumatic growth. We do offer one caution to researchers, however: work first needs to address some of the issues surrounding the conceptualization of post-traumatic growth to carefully isolate the variables that can be relied upon in the absence of a specific post-traumatic growth measure.

Fleeson claimed (this issue) that it is difficult to conclude that trauma affords real benefits unless an individual's daily thoughts, feelings, and behaviors match their beliefs about how they have changed. In light of Fleeson's (2001) argument that personality psychology should define behavior as consisting of density distributions of states, one reasonable interpretation of this

claim is that trauma cannot be said to have afforded real benefits unless changes in daily in thoughts, feelings, and behaviors—that is, actual personality change—have occurred. Thus, a man who claims that he enjoys time with his family more since the trauma should also report experiencing more enjoyable moments on a daily basis. In our target article we argued that research would benefit from examining intra-individual personality development as a function of traumatic life events with the use of daily process methods such as experience sampling (Fleeson, 2007; Conner, Tennen, Fleeson, & Barrett, 2009) and the day reconstruction method (Kahneman et al., 2004). These methods allow researchers to examine how belief in change is translated into daily and idiosyncratic changes in cognition and behavior. Additionally, these methods also enable important contextual information about the situation to be collected and analyzed. Jones, Brown, Serfass, and Sherman (this issue) proposed that post-traumatic growth may occur to some degree because survivors expose themselves to new situations. This hypothesis has definitely been neglected so far, even though we know that personality is the interaction of the person and the situation (Fleeson, 2004). The use of daily process methods would easily enable contextual information to be collected. For example, the use of the experience sampling method would allow an individual who reported being more agreeable since their trauma to report how agreeable they are moment-to-moment and the type of situations in which they were agreeable.

Finally, the examination of intra-individual personality development would also enable the development of tailored and "wise" intervention programs that may facilitate post-traumatic growth (Blalock, Calton, & Kashdan, this issue). Indeed, the use of daily process methods may shed light on important idiosyncratic manifestations of post-traumatic growth, and enable more specific and precise interventions to be tailored to an individual. This approach does not assume

that everyone needs to grow or grow similarly. These wise interventions take inter-trauma and inter-individual variability into account and therefore promote behaviorally-orientated change that has longer lasting effects on health and well-being.

Why we should care whether post-traumatic growth is genuine

The crux of the argument in our target article (Jayawickreme & Blackie, this issue) was that post-traumatic growth should be conceptualized as enduring positive personality change, and measured accordingly and with appropriate current-standing measures. We therefore dedicated considerable time to explaining the importance of investigating whether post-traumatic growth is an actual change in personality from pre-to-post trauma, and made several recommendations for rigorous research methodologies that could answer this lingering question. We conclude our article by returning to this issue, and reiterate once more why we believe it is so important that the future of research in this field extends beyond retrospective measurement of belief in change to establish the extent to which genuine (or actual) post-traumatic growth exists.

To illustrate the importance of the distinction between belief in positive change and actual change from pre-to-post trauma, we will refer to Fleeson's (this issue) article as he provides an excellent overview of the issue and why this question is of real significance. Fundamentally, he argues it is important that researchers establish the veracity of prospective change in post-traumatic growth to conclusively demonstrate that there are real benefits that follow from encountering trauma. Although a lack of evidence for prospective change would effectively deny that real benefits are derived from trauma, we do appreciate that it does not necessarily illustrate that maintaining a belief in change is of no value. These beliefs would be

inaccurate, but they may have some functional value in so far as they predict improvements in tangible outcomes.

Since experiences of adversity are an unfortunate part and parcel of life, establishing the veracity of post-traumatic growth shows that it possible for people to learn and grow from even the darkest and most tragic circumstances in life. This is of course a bitter truth, as the benefits that result from such experiences will never justify or compensate for the individual's pain. The knowledge we gain from establishing the veracity of prospective post-traumatic growth however, may be used most effectively and responsibly to design intervention programs that may reduce an individual's pain and enhance psychosocial adjustment. We would, of course encourage the development of wise interventions (Blalock, et al., this issue) that take the contextual details such as the individual's personality and the type of trauma into consideration before an intervention is selected and applied.

Conclusion:

We have presented a rationale for why post-traumatic growth should be conceptualized as positive personality change, and measured accordingly. We have attempted to shed some light on the unresolved issues that were identified by our colleagues, and clearly articulate the places that researchers can work together to tackle these challenges. We would once more like to thank all the authors who contributed commentaries on our target article. Each author challenged us to refine our own account and we are grateful to have benefited from this opportunity. We believe that the breadth of issues along with the diversity of opinions voiced in this special issue demonstrate the importance of the topic, and will undoubtedly pave the way for higher quality research.

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Table 1
Summary of Commentary and Authors' Response

Broad issues related to the target article	**Commentators' view**	**Author's response**
1) What is post-traumatic growth?	**Miller –** calls for further clarity of the conceptualization of post-traumatic growth. The current definition is limited in that it conflates process and outcome variables, and is not specific enough regarding the number and magnitude of positive changes that count as post-traumatic growth.	We argue for a separation of process and outcome variables, and offer some suggestions for post-traumatic growth outcomes. We also clarify our definition of "personality change" as enduring change in an individual's thoughts, feelings, and behaviors.
	Robinson – Is religiosity a key component of post-traumatic growth? What about fundamentalism? Secular societies may not report higher religiosity. Other post-traumatic growth domains may be missing such as morality, cognitive complexity, and well-being.	We argue for the separation of process and outcome variables, and agree that morality and cognitive complexity may represent post-traumatic growth outcomes.
	Fleeson - What does "real" or "actual" post-traumatic growth mean? And, why does it matter? It matters whether post-traumatic growth is real for two specific reasons: 1) no evidence for prospective change denies that there are benefits to trauma, and 2) if peoples' beliefs in change do not tally with their daily thoughts, feelings, and behaviors, then it is also hard to argue that the trauma has produced real	We agree, and call for future research to measure post-traumatic growth as actual change over time. We recommend the use of daily process methods to examine this question.

	benefits.	
	Roepke et al. – Researchers need to understand the complexity of the interplay between cognition and behavior in post-traumatic growth. Behavioral change is only useful in light of the cognitive interpretation. Behavioral change on its own should not be considered a more real or valid form of post-traumatic growth.	Agreed, but we also believe that enduring change is more likely to be sustained over time if these cognitive processes are translated into meaningful behaviors.
	Kreitler – personality change may not be the appropriate conceptualization of post-traumatic growth. There needs to be greater attention to the interplay between cognition and behavior, and research would benefit from employing existing frameworks such as the theory of planned behavior.	This depends on how personality is defined. We define personality in this context more broadly than fixed traits, and argue that personality change represents an enduring shift in the way people think, feel, and behave following a traumatic event. Such a definition is arguably most congruent with the definition of traits provided by Fleeson (2001) and Buss and Craik (1983).
	Kandler & Specht – Empirical evidence for positive personality change following negative events is not supported. Research shows small correlations between adverse life events and personality change, and it mostly not positive.	Post-traumatic growth may be observed in a shift in other levels of personality such as personal concerns (e.g., goals and priorities in life), and life narratives, but this may ultimately be manifested in changes in trait levels.

	Damian & Roberts – agree with the definition of post-traumatic growth as personality change. Big conceptual additions – focus on people's subjective experience of an event, not just that an event occurred, include positive and negative events, and broader outcomes including "creative achievement.	We agree and believe that the evaluative criteria for growth should be higher-order constructs such as creative achievement, which represent a change in how the individual sees and interacts with the world.
2) Is "trauma" the essential ingredient for post-traumatic growth?	**Luhmann –** the value of integrating the two fields is dependent on whether traumatic events are qualitatively different from non-traumatic events.	There may be similarities in the type of events – job loss may also cause one to question their identity – but it may be that the mortality aspect is the unique catalyst.
	Seery & Kondrak – Skeptical that trauma results in a special form of growth. It seems more likely that there are general coping mechanisms that people use to deal with stressors, and that traumatic events will only differ from other stressors in severity (not mechanism).	We are sympathetic to this view, but further empirical work is needed. We also argue that trauma may have unique event-specific triggers that are worthy of future investigation.
3) Methodological improvements in the design of studies assessing post-traumatic growth.	**Jones et al. -** post-traumatic growth may occur in part because the trauma alters the type of situations that people encounter. These different situations may in turn promote post-traumatic growth outcomes such as personal strength or openness to new experiences.	This represents an exciting new area for future research, and the use of daily process methods would easily enable contextual information to be collected.
	Anusic – longitudinal methods are needed to observe true change, but longer intervals are needed. True baselines may occur	A more careful conceptualization of post-traumatic growth will help isolate which variables from panel studies can be rely

	many years before a trauma. Comparison groups are needed to separate out normative change. Existing national panel surveys may help address these issues.	upon in the absence of a specific post-traumatic growth measure. We agree that these designs broaden the scope of what types of trauma promote post-traumatic growth.
	Blalock – post-traumatic growth would benefit from "wise" interventions that are brief, specific, and precise to an issue. post-traumatic growth is not a one fit all for interventions to be effective they need to be specific to the type of trauma and who is experiencing them.	The use of daily process methods may shed light on important idiosyncratic manifestations of post-traumatic growth, and enable more specific and precise interventions to be tailored to an individual.
	Tedeschi et al. – provides four reasons for why the post-traumatic growth inventory is a valid assessment of change over time.	None of the four reasons provided speak to actual change in pre-to-post trauma. The reasons only demonstrate that survivors believe they have changed.
	Joseph – We need to understand how actual and perceived growth are aligned, and how they are differentially related to other variables. It would be unwise to dismiss perceptions of growth as unworthy of study.	We are in agreement that perceptions of growth may be worthy of study, yet further clarity is needed on how they differentiate from actual growth (coping vs. behavioral change).
	Frazier et al. – suggest the multi-trait multi-method (MTMM) approach in which post-traumatic growth is assessed in multiple ways with multiple traits to demonstrate discriminant and convergent validity.	We agree with this approach, which extends our argument in the target article and has been utilized in personality research (DeYoung, 2006)