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Trauma exposure and short-term volitional personality trait change

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Abstract

Objective: Research into post-traumatic growth (PTG) finds individuals report positive changes in their identity, relationships, and worldviews after trauma. In a pre-registered 16-week longitudinal study, we examined trait change after recent trauma exposure to test an operationalization of PTG as positive personality change. We examined the influence of intrapersonal and social factors including motivation to change traits, perceived social support, and event centrality.

Method: Participants (n = 1004) reported on trauma exposure in past 1-month, centrality of each traumatic event, and social support. Participants with trauma exposure (n = 146) and a matched control group reported on their traits in 8 waves at 2-week intervals, and motivation to change traits in 3 waves.

Results: Although some trait change was observed, it was not consistent with PTG. We found agreeableness declined in the trauma relative to the control group among participants who did not want to change in this trait. Conscientiousness declined for individuals with highly central traumas. Social support predicted increases in emotional stability, conscientiousness, and openness but only for individuals in the control group.

Conclusions: We discuss the value of defining PTG as positive trait change and suggest future directions including assessment of facet-level changes and ideographic methods.

KEYWORDS

personality change, positive trait change, posttraumatic growth, trauma, volitional personality change

1 | INTRODUCTION

Adversity is an unfortunate part and parcel of life. Yet, the belief that overcoming adversity can have a transformative and empowering impact is a well-endorsed mantra in society. This notion—referred to as post-traumatic growth (PTG; Tedeschi & Calhoun, 2004)—has attracted scientific attention over recent decades. Research has consistently demonstrated that people self-report they have made positive changes to their identities, relationships, and worldviews after experiencing distressing, and potentially traumatic life events. A recent meta-analysis found that as

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high as 52% of participants self-reported moderate to high levels of PTG after a trauma (Wu et al., 2019).

Yet, although research has found people frequently perceive PTG after trauma, there is a disconnect between the definition and measurement of PTG. Specifically, PTG is theorized as genuine (pre-to-post-trauma) positive changes to aspects of individuals' personalities, but it is rarely tested as such due to an over-reliance on retrospective and cross-sectional measurement (Jayawickreme & Blackie, 2014). The aim of this study was to empirically test a theoretical proposal to define and measure PTG in terms of positive personality change (Jayawickreme et al., 2021; Jayawickreme & Blackie, 2014). We further examined the influence of key intrapersonal and social conditions—motivation to change personality traits, trauma centrality, and social support—in a pre-registered 16-week longitudinal design with a control condition for comparison.

1.1 | Post-traumatic growth as positive personality change

The theory of PTG was developed within clinical psychology to describe the lived experiences of survivors of trauma. Contrary to the dominant understandings of trauma recovery at the time, Tedeschi and Calhoun (1995) found that clinical diagnoses of post-traumatic stress disorder (PTSD) did not fully capture their clients' experiences. Despite struggling with the pain caused by trauma, people were also identifying how the trauma had shaped their identities, relationships, and worldviews in ways they felt were positive for navigating their post-trauma lives. For example, individuals reported feeling closer to loved ones, more appreciative of life, more connected to their spiritual beliefs, a greater sense of personal strength, and open to exploring possibilities in their lives (Tedeschi & Calhoun, 1996). In the years that followed, Tedeschi and Calhoun (1996, 2004) designed a questionnaire to measure PTG and developed a theory of PTG that outlined the processes involved from trauma exposure to PTG. Critically, the model defined PTG as more than a return to pre-trauma baselines, and in terms of positive change: "...an experience of improvement..." (Tedeschi & Calhoun, 2004, p. 4).

Yet, despite this, researchers have consistently assessed PTG with retrospective questionnaires in cross-sectional designs, which can only assess people's beliefs about how they may have changed as a result of the trauma, and not how they have actually changed from pre-to-post trauma. Moreover, there is considerable evidence within PTG research (Blackie et al., 2017; Boals et al., 2019; Frazier et al., 2009; Gunty et al., 2011; Owenz & Fowers, 2019; Yanez et al., 2011) and within personality psychology more generally (Hudson et al., 2019; Robins et al., 2005; Wilson & Ross, 2001) demonstrating that retrospective perceptions of change do not accurately correlate with how individuals change over time. Accordingly, some researchers have argued PTG should be defined and measured as positive personality change (Affleck & Tennen, 1996; Jayawickreme & Blackie, 2014), given that the trauma is predicted to alter individuals' characteristic (pre-trauma) patterns of cognitions, emotions, and behaviors—that is, to effectively alter individuals' personality (Funder, 2001).

However, the study of personality is broad and it can be defined at multiple levels (McAdams, 1995), and early calls by Jayawickreme and Blackie (2014) to examine PTG as positive personality change were not explicit on how to operationalize personality (Miller, 2014). The current study attempts to address this by defining and measuring PTG as positive (volitional) personality trait change in the Five Factor Model. We have chosen to examine PTG as trait change for two reasons. First, theories of PTG have discussed it in terms of transformative shifts in individuals' pre-trauma patterns of thoughts, feelings, and behaviors (Tedeschi & Calhoun, 2004), therefore this definition should translate into changes in the relatively enduring aspects of individuals' personalities—that is, personality traits. Second, we defined PTG as *volitional* trait change, because PTG is not theorized to be an unconscious or automatic reaction to trauma, but rather the outcome of an effortful and active process (Tedeschi & Calhoun, 2004). For example, an older individual might decide to expand their social network and meet new people after the death of a long-term partner. Any efforts taken by the individual to achieve this goal should also be reflected in increases in their trait level of extraversion (i.e., increases in talkative, sociable, and lively behaviors). Our conceptual rationale is further supported by empirical evidence showing that traits can change in response to significant life events (Bleidorn et al., 2018; Hudson et al., 2012; Specht et al., 2011; Zimmermann & Neyer, 2013) and people can successfully change their personality traits in accordance with their goals to do so (Hudson et al., 2020).

However, although this study advances PTG research by operationalizing the term positive personality change, much more research is needed to understand how life events shape personality trait change (Bleidorn et al., 2018). The research into trait change after negative life events has found mixed results with positive trait changes in some facets of agreeableness, extraversion and conscientiousness after spousal loss (Hoerger et al., 2014), no trait changes after spousal loss (Chopik, 2018), and non-linear patterns of negative trait changes after unemployment depending on moderators, including gender (Boyce et al., 2015). It is unlikely that it is simply event occurrence itself that is responsible for personality

trait change (Lodi-Smith & Roberts, 2007; Wrzus & Roberts, 2017). Further research is needed into the intrapersonal and social conditions that interact with trauma exposure to shape personality trait change. We examined three conditions—motivations to change one's personality, social support, and event centrality—as all these conditions are consistent either with PTG theory or empirical research on positive personality change processes within personality psychology research more broadly.

1.2 | Intrapersonal and social conditions for post-traumatic growth

We designed this study primarily to examine the role of individuals' motivation to change their personality traits (Hennecke et al., 2014; Hudson & Fraley, 2017) with the manifestation of PTG defined as positive personality trait change, because PTG is not the outcome of a passive process. Tedeschi and Calhoun (2004) propose that for PTG to occur individuals need to disengage from pre-trauma schemas and commit to rebuilding their lives in line with the meaning they have made. This explanation shares some similarities with a theoretical account proposed to explain how life experiences may shape trait change across the lifespan. Specifically, Lodi-Smith and Roberts (2007) argued that life experiences that facilitate the adoption of new social roles may influence how individuals think about their social identities; and a strong commitment to a new identity may reinforce the importance of enacting the role. Although these theoretical accounts have discussed personality trait change after the adoption of perhaps more normative social roles – employee or spouse – it seems plausible that PTG happens as a result of similar self-regulatory mechanisms. This intriguing hypothesis was discussed by Ford et al. (2008) who write that "trauma may set the occasion for growth when post-traumatic events or circumstances support the development or enhancement of adaptive self-regulatory capacities" (p. 317), but to our knowledge, adaptive self-regulation has not been empirically tested in PTG work, nor within a framework of positive trait personality change. In this study, we view motivations and goal-setting efforts to change traits as an adaptive self-regulatory capacity to support the development of PTG.

Furthermore, empirical research into volitional personality change has found that people are motivated to improve their personalities and this intrapersonal mechanism is associated with trait change over time. Several research studies have now observed that individuals' motivation to change their traits is driven by their dissatisfaction with or low standing on the traits (Baranski et al., 2017; Hudson & Roberts, 2014; Miller et al., 2019; Quintus et al., 2017). Collectively, these findings suggest that increases in the big five traits are viewed by individuals as socially desirable and therefore provide a criterion with which to define and measure PTG as "*positive* personality change" (Jayawickreme & Blackie, 2014). Research has also demonstrated that individuals' goals to change traits can translate into actual trait change. Specifically, Hudson and Fraley (2015) found that students who formed goals to change their traits at the start of the academic semester demonstrated increases in those traits and trait-relevant behaviors by the end of the semester, and this was also associated with increases in well-being across the semester (Hudson & Fraley, 2016). A recent mega-analysis across 12 studies demonstrated that the formation of change goals reliably predicted trait change in the big five traits (Hudson et al., 2020). These findings provide both a compelling theoretical and empirical case for examining personality change goals as mechanism for PTG when it is operationalized as positive trait change.

Although we designed this study primarily to examine PTG as volitional (positive) personality trait change, we also included two further mechanisms identified from theory and research into PTG for comparison. Event centrality measures the extent to which an individual views a traumatic event as a self-defining, life-altering, and a central experience in their life story (Berntsen & Rubin, 2006). Importantly, research has demonstrated that event centrality is critical to PTG, as associations between perceptions of PTG, positive affect, and depression are stronger (and comparable in effect size to findings reported in meta-analyses) for high centrality traumas (Boals et al., 2010). Parallel effect sizes were not observed when analyses were restricted only to individuals whose traumatic event met clinical trauma criterion. We therefore examined if high trauma centrality predicted positive trait change over time. Finally, we examined social support because PTG is not expected to manifest within a social vacuum. Both PTG theory (Tedeschi & Calhoun, 2004) and meta-analyses (Prati & Pietrantoni, 2009) have identified social support to be associated with perceptions of PTG. We therefore examined if high levels of perceived social support predicted positive trait change over time.

1.3 | Overview of the current study

The current study was designed to empirically test recent theoretical proposals of PTG in a pre-registered 16-week longitudinal study design with a relevant control group. Building on recent calls for improvements to the definition and quality of measurement of PTG (Jayawickreme et al., 2021), we examined the following research questions: (1) To what extent does PTG manifest as positive changes in

the big five personality traits over 16-weeks among individuals who have recently experienced a traumatic life event? We also explored non-linear (quadratic) growth in traits, and whether the trauma and control groups differ in the variance of trait growth. (2) To what extent is PTG as positive trait change predicted by individuals' motivations to change their traits, traumatic event centrality, and social support? Finally, we also set out some alternative analysis plans in our pre-registration for if we did not observe positive trait changes after trauma exposure. Specifically, we examined if individuals who had experienced a trauma (compared to a control group) endorsed goals to change their traits more strongly in wave 1 and whether endorsement of change goals changed over time. These questions were developed from research arguing self-reports of PTG can reflect self-enhancement coping (McFarland & Alvaro, 2000; Taylor et al., 2000), and as such, we predicted that individuals might strongly endorse change goals initially after a trauma in wave 1 when coping efforts are most required, but that their endorsement may eventually decline as the threat of the trauma declines over time.

2 | METHOD

2.1 | Participants

We recruited 1004 participants from Prolific to take a short pre-screen survey to determine their eligibility for a 16-week longitudinal study advertised on the relationship between personality and life experiences. Participants had to be 18 years or older and reside in the UK to ensure the support services provided were accessible. Prolific is a reliable online recruitment tool, producing higher quality data and having a more diverse participant pool compared to similar websites (Peer et al., 2017). Participants were compensated £0.45 for completing this pre-screen. We selected 292 participants for the longitudinal study based on the inclusion criteria outlined in the procedure section. There were 224 females and 68 males. The mean age in years was 32.36 (SD = 9.89) with participants ranging from 18 to 62. The sample identified as White British (73.2%), White European (13.4%), Indian (2.7%), Black Caribbean (1.4%), Black African (1.4%), Chinese (1.4%), Bangladeshi (0.7%), Pakistani (0.7%), and some participants (4.8%) self-identified in the open-text box as Mixed Race, Latino and South Asian.

2.2 | Participant attrition

Of the 292 participants invited, 275 participants completed wave 1 (94%), which was the highest completion rate in all waves of data collection. A sample size of 275 participants afford approximately 94% power to detect average-sized psychological effects (equivalent to $r = .21$; Richard et al., 2003). Participants were able to complete intermittent waves, if desired (e.g., a participant could complete waves 1, 4, 5, and 8 while missing others). The completion rate dropped to 88% in wave 2 where it remained stable for the most part between waves 3 (83%), 4 (81%), and 5 (80%). It dropped to 78% in waves 6 and 7 and to 72% in wave 8, the last wave of data collection. The rate of attrition was higher among the participants who had experienced a recent traumatic life event—there was a loss of 42 participants (30%) between waves 1 to 8, whereas there was a loss of 24 participants (18%) between waves 1 to 8 among participants in the control group.

On average, participants provided 6.78 waves of data (SD = 1.93). Participants in the trauma and control groups provided similar total waves of data ($r = -.01$, 95% CI [−0.12, 0.11]). Among the trauma group, participants tended to provide more waves of data if they reported experiencing traumatic events that were highly central to their lives ($r = .24$, 95% CI [0.08, 0.40]). Across the entire sample, participants tended to provide greater numbers of data waves if they were highly conscientious ($r = .15$, 95% CI [0.03, 0.26]) and did not want to increase in conscientiousness ($r = -.18$, 95% CI [−0.29, −0.06]) or openness ($r = -.13$, 95% CI [−0.25, −0.02]), as measured at Wave 1. No other study variables statistically significantly predicted attrition (all $|r|$s $\leq .11$).

2.3 | Study procedure

We recruited a large sample of participants via Prolific ($n = 1004$) to complete a 2-minute pre-screen survey to identify individuals who had experienced a traumatic life event 1-month prior to this survey. We followed recruitment procedures of Frazier et al. (2009) to ensure our participant selection was appropriate for the study of PTG. We selected participants if they fulfilled the following three criteria: (1) they had experienced 1 (or more) event(s) on The Traumatic Life Events Questionnaire (TTLEQ; Kubany et al., 2000) in the past 1-month, (2) reported that the trauma had evoked intense feelings of fear, helplessness or horror (YES/NO), and (3) rated that the event caused them either "*considerable distress*" (4) or "*extreme distress*" (5) when it first happened. One hundred and forty-six participants met the inclusion criteria. The number of traumatic events reported ranged from 1 to 6. We excluded 1 person who reported 11 traumatic events, assuming that they might have answered about lifetime trauma.

The most commonly reported traumatic events were: sudden, unexpected loss of a family member or friend

TABLE 1 Descriptive statistics and correlations at wave 1

			Correlations													
Variable	***M***	**SD**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**10**	**11**	**12**	**13**	**14**	**15**
1. Trauma Group[a]	0.49	0.50	–														
2. Traumatic Events[b]	0.71	0.94	0.78	–													
3. Mean Fear[c]	0.96	0.14	–	**−0.43**	–												
4. Mean Distress[c]	4.17	0.55	–	**−0.27**	**0.38**	–											
5. Mean Centrality[c]	3.37	0.86	–	−0.08	**0.23**	**0.47**	–										
6. Social Support	4.24	1.02	−0.09	**−0.13**	−0.08	−0.05	0.02	–									
Traits																	
7. Extraversion	2.85	0.87	0.11	0.04	0.01	0.02	−0.14	**0.22**	–								
8. Agreeableness	3.69	0.68	−0.03	0.01	0.07	0.07	0.09	**0.14**	**0.15**	–							
9. Conscientiousness	3.61	0.64	−0.02	0.03	0.13	0.11	0.16	0.03	**0.20**	**0.34**	–						
10. Stability	2.71	0.82	**−0.16**	−0.11	0.03	−0.02	0.02	**0.12**	**0.44**	**0.36**	**0.31**	–					
11. Openness	3.45	0.62	**0.17**	**0.20**	−0.05	−0.03	0.01	0.02	**0.17**	0.04	0.03	0.04	–				
Change goals																	
12. Extraversion	0.62	0.49	0.03	0.05	0.02	0.06	0.05	**−0.17**	**−0.49**	0.07	**−0.13**	**−0.28**	0.05	–			
13. Agreeableness	0.51	0.51	0.08	−0.03	0.07	0.05	0.11	−0.01	−0.03	−0.05	**−0.14**	−0.10	0.07	**0.28**	–		
14. Conscientiousness	0.72	0.58	0.06	−0.01	−0.11	−0.11	0.01	−0.04	**−0.16**	−0.04	**−0.41**	−0.11	0.08	**0.38**	**0.57**	–	
15. Stability	0.97	0.62	0.11	0.07	−0.04	−0.04	−0.08	−0.07	**−0.30**	0.00	**−0.20**	**−0.38**	0.09	**0.52**	**0.50**	**0.66**	–
16. Openness	0.57	0.51	0.04	0.07	−0.09	−0.07	0.12	−0.02	−0.10	0.11	**−0.24**	0.00	**0.17**	**0.31**	**0.46**	**0.59**	**0.50**

Note: Ninety-five percent confidence intervals for correlations in **boldface** do not contain zero.

[a]This variable equals 1 for participants who reported at least one traumatic event and 0 for participants who did not.

[b]This variable captures the *total number* of traumatic events reported by an individual.

[c]These variables were only assessed for participants in the trauma group (i.e., those who reported at least one traumatic event).

($n = 41$), having a loved one experience a life-threatening illness or disabling condition ($n = 32$) and the open-ended "any other distressing life event" option ($n = 49$) with participants reporting different events, including relationship dissolution, attempted suicide, mental health challenges and job loss. We included all the self-identified traumatic events providing participants also indicated that the event(s) met criteria as outlined above (i.e., fear/helplessness and severe distress). We selected a matched control group of 146 participants who had not experienced any traumatic events in the past 12-months. We matched control participants to the participants who had experienced trauma on both age and gender. In all but one case, a perfect match was possible. In this case, we selected a participant of the same gender, but 1-year younger than their counterpart.

Participants who were invited to continue in the study were asked to complete 8 further online surveys. Using the Prolific system, we sent participants a survey every 2-weeks for 16-weeks. The first survey was sent out 2-weeks after the pre-screen survey. Participants were invited at every subsequent wave regardless of whether they had completed the last survey. Participants were given 1-week from the launch date of each new survey to complete it. Participants were compensated between £0.50 and £1.00 depending on the estimated completion time of each survey, and as per the financial compensation recommendations of Prolific at the time of data collection.

2.4 | Survey questionnaires

We outline only the questionnaires used in this paper, but the reader can view all questionnaires administered at each wave by consulting our pre-registration at the OSF[1]: https://osf.io/a8tw5/

In the pre-screen survey, participants completed the TTLEQ (Kubany et al., 2000) to indicate if they had experienced any traumatic events in the 1-month prior to the survey. TTLEQ has 21 potentially traumatic life events, including natural disasters, physical abuse, sexual assault, life-threatening accidents and illnesses and witnessing family violence. Following Frazier et al. (2009), we adapted TTLEQ to ask about the 1-month prior to the pre-screen and to ask participants to respond using a *yes* (1) or *no* (0) scale. We also removed 4 events about childhood trauma. For each event they reported, participants reported if the event caused intense fear, helplessness or terror on a *yes* (1) or *no* (0) scale, and "how much distress the event had caused when it first happened" with a 5-point Likert scale from '1' (*no distress*) to '5' (*extreme distress*). Additionally, for

TABLE 2 Trauma predicting trait growth across time

	Outcome: Traits											
	Extraversion			Agreeableness			Conscientiousness			Stability			Openness		
Predictor	*b*	95% CI		*b*	95% CI		*b*	95% CI		*b*	95% CI		*b*	95% CI	
Intercept	−0.08	−0.24	0.08	0.00	−0.15	0.16	0.03	−0.13	0.19	0.17	0.01	0.32	−0.10	−0.26	0.06
Trauma	**0.24**	0.02	0.47	−0.06	−0.28	0.16	−0.05	−0.28	0.17	**−0.34**	−0.56	−0.11	**0.29**	0.07	0.51
Month	−0.01	−0.03	0.00	**0.03**	0.01	0.05	−0.02	−0.03	0.01	0.01	−0.01	0.03	−0.03	−0.05	−0.01
Month × Trauma	0.00	−0.03	0.02	**−0.04**	−0.07	−0.01	−0.02	−0.05	0.01	−0.02	−0.04	0.01	0.02	−0.01	0.05

Note: Ninety-five percent confidence intervals for parameter estimates in **boldface** do not contain zero.

each event reported, participants completed the short-form version of the event centrality scale (Berntsen & Rubin, 2006) with 7 questions about the extent to which the event had affected their outlook on life and influenced their identity using a 5-point Likert scale from "1" (*totally disagree*) to "7" (*totally agree*) (Wave 1 mean $\alpha = 0.91$). Afterwards, all participants provided age, gender and ethnicity and indicated whether they had people in their lives that they could "turn to for emotional support" using a 5-point Likert scale from "1" (*strongly disagree*) to "5" (*Strongly agree*).

Participants completed the Big Five Inventory (BFI; John & Srivastava, 1999) on all 8 waves. The BFI is a 44-item scale that measures extraversion, agreeableness, conscientiousness, openness to experience, and neuroticism using a 5-point Likert scale from "1" (*strongly disagree)* to "5" (*strongly agree*) (Wave 1 αs ranged from $\alpha = 0.78$ [conscientiousness and openness to experience] to $\alpha = 0.88$ [extraversion]). Participants completed the 44-item Change Goals Big Five Inventory (C-BFI; Hudson & Roberts, 2014) in waves 1, 3 and 6. The C-BFI is adapted from the BFI and asks participants to rate the extent to which they would like to change their levels of extraversion, agreeableness, conscientiousness, openness to experience, and neuroticism. Participants rate items using a 5-point Likert scale from "2" (*much more than I currently am)* to "-2" (*much less than I currently am*) with "0" as the maintaining the status quo (*I do not want to change in this trait*) (Wave 1 αs ranged from $\alpha = 0.75$ [extraversion] to $\alpha = 0.87$ [conscientiousness]). Finally, in all 8 surveys, we asked participants 4 attention check items, where they had to select a pre-determined response on the given scale. Participants were excluded from analyses on a wave-by-wave basis if they failed 3 or more of these attention checks.

3 | RESULTS

The data and syntax for this manuscript are available on the OSF via the project link provided in the method section. Table 1 contains the descriptive statistics and Wave 1 correlations for all study variables. Replicating prior research (Hudson & Roberts, 2014), the average participant in our sample wanted to increase with respect to each big five traits (i.e., change goal means ranged from $M = 0.51$ [$SD = 0.51$; agreeableness] to $M = 0.97$ [$SD = 0.62$; emotional stability]). The average participant in the trauma group reported 1.46 traumatic events ($SD = 0.85$), which were perceived as moderately central to their lives ($M = 3.37$, $SD = 0.86$). At Wave 1, participants in the trauma group reported lower emotional stability ($r = -.16$, 95% CI [−0.27, −0.04]) but higher openness to experience ($r = .17$, 95% CI [0.05, 0.28]), as compared with their peers in the control group.

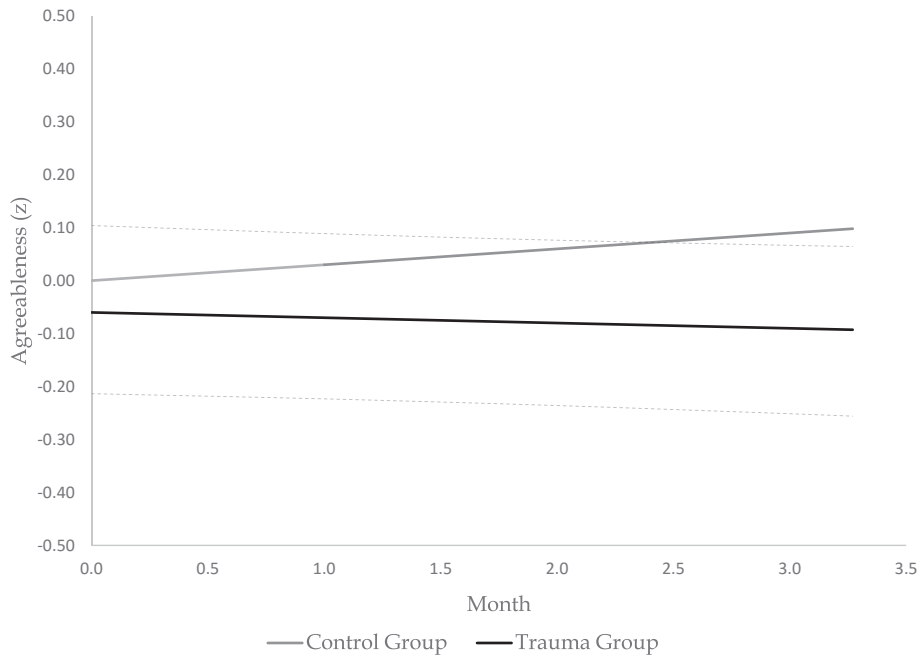

FIGURE 1 Growth in agreeableness in the trauma and control groups. The faint, dashed gray lines depict the 95% confidence bands for the trauma group.

3.1 | Does recent trauma exposure predict positive trait changes?

We examined our first research question in these analyses to determine whether recent trauma exposure predicted positive changes in the big five traits. We modeled participants' repeated measures of personality traits as a function of (a) whether they were in the trauma or control group, (b) time, and (c) the interaction between the trauma group and time. As seen in Table 2, the interaction was significant for agreeableness, as participants in the trauma group experienced relative decreases in agreeableness each month, compared to their peers in the control group ($b_{\text{Month}\times\text{Trauma}} = -0.04$, 95% CI [−0.07, 0.01]). As depicted in Figure 1, participants in the control group tended to *increase* 0.03 SDs in agreeableness each month (95% CI [0.01, 0.05]). In contrast, participants in the trauma group did not experience statistically significant growth in agreeableness each month (simple $b_{\text{Month}} = -0.01$, 95% CI [=−0.03, 0.01]). Recent trauma exposure did not predict growth in any other trait (all $|b_{\text{Month}\times\text{Trauma}}|\text{s} \leq 0.02$, 95% CI [−0.01, 0.05]).

As per reviewers' requests, we ran two series of exploratory analyses. First, we examined whether trauma predicted quadratic growth in the big five traits. As seen in Table 3, participants in the trauma and control group did not differ in quadratic growth in any trait (all $|b_{\text{Month}\times\text{Month}\times\text{Trauma}}|s \leq 0.02$, 95% CI [−0.01, 0.05]). Finally, we examined whether participants in the trauma and control groups differed with respect to *variance* in trait growth across time. These analyses test, for example, whether experiencing trauma predicts greater individual changes in traits—albeit not in any sort of systematic direction. To test this, we created two series of nested MLMs. In one series of MLMs, we estimated separate random slopes (which capture the variance in trait growth) for the trauma and control groups. In a second series of analyses, we constrained the random slope to be equal across both groups. As seen in Table 4, participants in the trauma group experienced greater variability in growth in agreeableness ($s^2 = 0.020$), as compared to their peers in the control group ($s^2 = 0.008$; $\chi^2[1] = 6.43$, $p = .01$)—but no other traits (all $\chi^2[1]\text{s} \leq 3.51$, $p \geq .06$). These analyses indicate that—in addition to experiencing less positive mean-level growth in agreeableness—people in the trauma group also experienced greater variance in growth in agreeableness. In other words, individuals in the trauma group differed from one another more dramatically in terms of how their agreeableness was changing across time, as compared to their peers in the control group.

TABLE 3 Trauma predicting nonlinear trait growth across time

	Outcome: Traits															
	Extraversion			**Agreeableness**			**Conscientiousness**			**Stability**			**Openness**			
Predictor	***b***	**95% CI**		***b***	**95% CI**		***b***	**95% CI**		***b***	**95% CI**		***b***	**95% CI**		
Intercept	−0.08	−0.24	0.08	0.00	−0.16	0.16	0.02	−0.14	0.18	0.13	−0.02	0.29	−0.09	−0.24	0.07	
Trauma	0.23	−0.00	0.45	−0.07	−0.30	0.16	−0.04	−0.26	0.19	**−0.31**	−0.53	−0.08	**0.30**	0.08	0.53	
Month	−0.02	−0.08	0.04	0.03	−0.04	0.10	0.01	−0.07	0.09	**0.08**	0.01	0.15	−0.04	−0.12	0.03	
Month×Trauma	0.03	−0.05	0.13	−0.02	−0.13	0.08	−0.06	−0.17	0.05	−0.09	−0.18	0.01	−0.02	−0.12	0.08	
Month^2	0.00	−0.02	0.02	0.00	−0.02	0.02	−0.01	−0.03	0.02	**−0.02**	−0.04	−0.00	0.00	−0.02	0.03	
Month^2×Trauma	−0.01	−0.04	0.01	−0.01	−0.04	0.03	0.01	−0.02	0.05	0.02	−0.01	0.05	0.01	−0.02	0.04	

Note: Ninety-five percent confidence intervals for parameter estimates in **boldface** do not contain zero.

TABLE 4 Does variance in personality growth differ between trauma and control group?

	Slopes constrained equal		Slopes free to vary				
			Slope variance				
Trait	**Slope Variance**	**-2LL**	**Trauma**	**Control**	**-2LL**	**Δ-2LL**	***p***
Extraversion	0.007	1783.66	0.010	0.005	1780.78	2.88	.09
Agreeableness	0.014	2361.56	0.020	0.008	2355.13	6.43	.01
Conscientiousness	0.013	2666.35	0.018	0.009	2662.84	3.51	.06
Emotional stability	0.014	2224.85	0.018	0.010	2221.48	3.37	.07
Openness	0.013	2312.32	0.011	0.015	2311.57	0.75	.39

Note: -2LL = -2 log likelihood of model; improvement in model fit from freeing slopes to vary was tested using $\Delta\text{-2LL} \sim \chi^2(1)$.

3.2 | Influence of interpersonal and social conditions on positive trait changes after recent trauma exposure?

In our next analyses, we examined our second research question on the extent to which positive trait changes are predicted by both the experience of trauma and the presence of specific PTG-facilitating conditions. We first examined whether trauma and change goals interacted to predict trait growth. We predicted that those who had both experienced trauma and who wanted to change their personalities might experience the greatest personality growth across time. As seen in Table 5, trauma interacted with change goals to predict growth in agreeableness ($b_{\text{Month}\times\text{Trauma}\times\text{Goal}} = 0.04$, 95% CI [0.01, 0.07]), but no other traits (all $|b_{\text{Month}\times\text{Trauma}\times\text{Goal}}|s \leq 0.02$, 95% CI [−0.00, 0.05]). As depicted in Figure 2, this interaction indicates that participants who both (a) experienced trauma and (b) did not want to increase in agreeableness tended to experience declines in agreeableness across time. In contrast, participants who either (a) did not experience trauma or (b) wanted to become more agreeable tended to increase in agreeableness across time.

We next examined if trauma and event centrality interacted to predict trait growth. We modeled participants' repeated measures of personality traits as a function of (a) event centrality, (b) time, and (c) the interaction between event centrality and time. We calculated event centrality in two ways—(1) average centrality (Table 6) across all reported traumas and (2) maximum centrality (Table 7) based on the highest event centrality rating of any traumatic event reported – given that many participants reported multiple traumatic events and provided centrality ratings separately for each event. As seen in Tables 6 and 7, regardless of how event centrality was calculated, it predicted more negative change in conscientiousness ($b_{\text{month}\times\text{centrality}} = -0.03$, 95% CI [−0.06, −0.01]), but in no other trait. This interaction indicates that people who experienced traumatic events that were especially central to their lives tended to experience larger declines in conscientiousness across the next few months, as compared to individuals who had experienced less central traumatic events.

We next examined if trauma and social support interacted to predict trait growth. We modeled participants' repeated measures of personality traits as a function of (a) social support, (b) time, (c) whether they were in the trauma or control group, and (d) all the associated interactions between these variables. As seen in Table 8, there were significant negative interactions between social support, trauma, and time for conscientiousness ($b_{\text{trauma}\times\text{support}\times\text{month}} = -0.04$, 95% CI [−0.06, −0.00]), emotional stability ($b_{\text{trauma}\times\text{support}\times\text{month}} = -0.05$, 95% CI [−0.07, −0.02]), and openness ($b_{\text{trauma}\times\text{support}\times\text{month}} = -0.04$, 95% CI [−0.06, −0.01]). We plotted the interaction for emotional stability at low and high levels of social support (Figure 3) to depict these negative associations. These interactions suggest a counterintuitive phenomenon wherein individuals in the trauma group tended to experience similar trait growth irrespective of social support—whereas their peers in the control group tended to experience more positive trait growth if they reported perceiving high levels of social support.

3.3 | Does recent trauma exposure predict endorsement of change goals?

In our final set of analyses, we examined some alternative hypotheses because we had not observed consistent and robust evidence that recent trauma exposure was associated with positive trait changes. In accordance with the notion that individuals may perceive PTG to fulfill self-enhancement needs after trauma (yet not necessarily change accordingly; Taylor, 1989), we investigated whether: (1) participants in the trauma group endorsed change goals more strongly than their peers in the control group, and (2) if the endorsement of change goals declined over time for participants in the trauma group. To examine this first alternative hypothesis, we examined correlations

TABLE 5 Interaction between trauma and change goals in predicting trait growth across time

	Outcome: Traits											
	Extraversion			Agreeableness			Conscientiousness			Stability			Openness		
Predictor	*b*	95% CI		*b*	95% CI		*b*	95% CI		*b*	95% CI		*b*	95% CI	
Intercept	−0.08	−0.22	0.05	0.00	−0.16	0.16	0.02	−0.12	0.17	**0.16**	0.01	0.30	−0.10	−0.26	0.05
Goal	**−0.53**	−0.68	−0.39	−0.06	−0.23	0.11	**−0.36**	−0.51	−0.21	**−0.41**	−0.56	−0.26	0.11	−0.05	0.26
Month	−0.02	−0.03	0.00	**0.03**	0.01	0.05	−0.02	−0.04	0.01	0.01	−0.01	0.03	**−0.03**	−0.05	0.01
Month × Goal	0.01	−0.01	0.03	−0.01	−0.03	0.01	−0.01	−0.03	0.02	−0.01	−0.03	0.02	0.01	−0.01	0.03
Trauma	**0.25**	0.05	0.45	−0.07	−0.30	0.17	−0.02	−0.23	0.19	**−0.28**	−0.49	−0.07	**0.26**	0.04	0.49
Trauma × Goal	0.09	−0.11	0.29	0.04	−0.19	0.26	−0.05	−0.25	0.16	0.07	−0.14	0.28	0.09	−0.16	0.31
Month × Trauma	0.00	−0.02	0.02	**−0.05**	−0.08	−0.02	−0.01	−0.04	0.02	−0.01	−0.04	0.02	0.02	−0.00	0.05
3-Way interaction	−0.02	−0.05	0.00	**0.04**	0.01	0.07	0.00	−0.03	0.03	0.00	−0.03	0.03	0.00	−0.03	0.03

Note: Ninety-five percent confidence intervals for parameters estimates in **boldface** do not contain zero.

between change goal endorsement at wave 1 and group (trauma [coded as 1] vs. control) and as reported in Table 1 there were no significant associations between endorsement of change goals at Wave 1 and the trauma group for any trait (all rs ≤ .11, 95% CI [−0.01, 0.23]). Similarly, in exploratory analyses, the number of traumatic events participants reported experiencing did not predict Wave 1 change goals (all $|r|$s ≤ .07, 95% CI [−0.05, 0.19]).

We next examined whether participants in the trauma and control groups showed differential trajectories in their change goals across time to determine if endorsement of change goals decreased over time for participants with recent trauma exposure. To test this idea, we constructed a series of multilevel models (MLMs). In each MLM, we modeled the repeated measurements of participants' standardized change goals (which were measured at waves 1, 3, and 6) as a function of whether or not they were in the trauma group or not (dummy coded: 1 = trauma, 0 = control) and time (which was scaled in terms of months). We analyzed change in goal endorsement for each trait separately. For example, the MLM for goals to change with respect to extraversion was:

$$(\text{Extraversion Change Goals})_{ij} = b_0 + b_1(\text{Trauma})_i + b_2(\text{Month})_{ij} + b_3(\text{Trauma})_i(\text{Month})_{ij}\varepsilon + U_i + \varepsilon_{ij}.$$

In this model, the b_2(Month) coefficient captures the extent to which people *in the control group* experienced increases or decreases in their extraversion change goals each month (scaled in SDs/month). The Month × Trauma interaction captures any differences between the trauma group and control group in terms of monthly growth in change goals. As can be seen in Table 9, trauma did not statistically significantly predict monthly declines in change goals for any trait (all $|b_{\text{Month}\times\text{Trauma}}|s \leq 0.04$, 95% CI [−0.11, 0.04]). Thus, in sum, people who recently experienced a traumatic event reported similar changes goals both at Wave 1 and across time, as compared with the control group.

4 | DISCUSSION

In this pre-registered 16-week longitudinal study, we investigated whether recent exposure to trauma predicted positive volitional trait change over time. This study was developed to address calls from researchers to improve the quality and rigor of research on PTG by examining it through the theoretical lens and with the methodologies used in personality psychology (Jayawickreme et al., 2021; Jayawickreme & Blackie, 2014). We sought to move PTG research past measuring perceptions of positive changes and to examine the extent to which individuals' traits

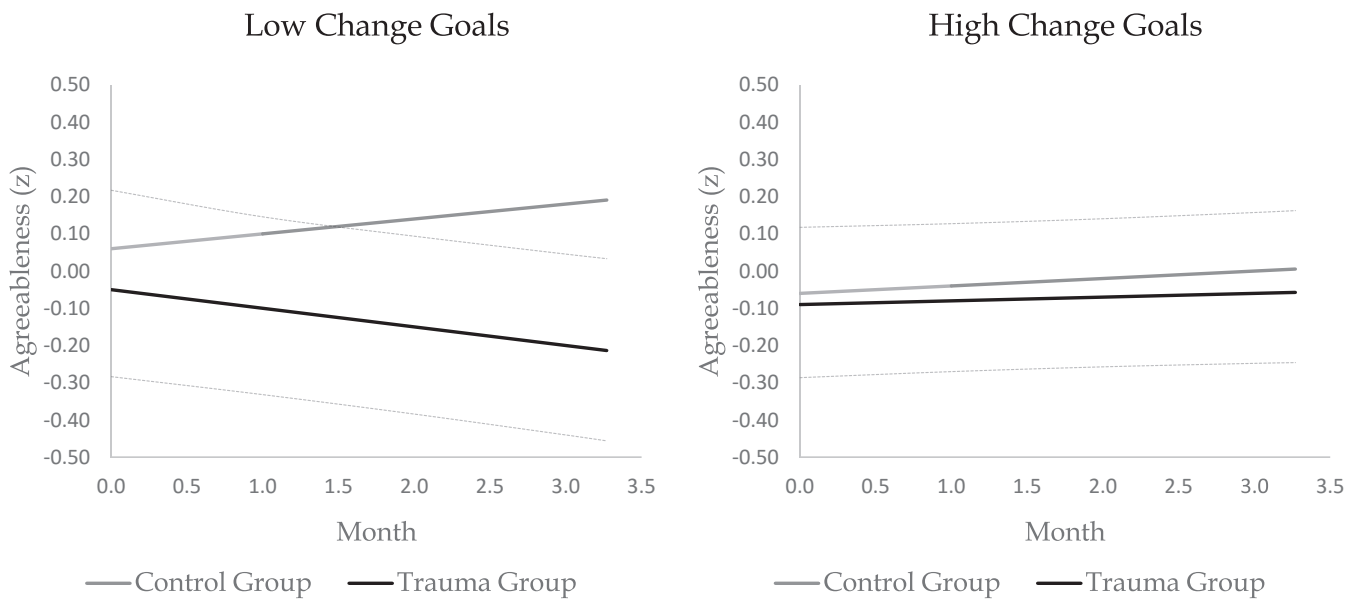

FIGURE 2 Trauma and change goals predicting growth in personality traits. Change goals were measured at Wave 1. The "low change goals" lines were plotted at 1 SD below the mean. The "high change goals" lines were plotted at 1 SD above the mean. The faint, dashed gray lines depict the 95% confidence bands for the trauma group.

changed over 16-weeks following recent trauma exposure. We also examined the influence of some key intrapersonal and social conditions theorized to facilitate PTG, and recruited a control group of individuals with no exposure to trauma in the prior 12-months to allow for comparisons.

Although we did observe some trait changes, these findings were not consistent with PTG. We observed trait change only in agreeableness when examining PTG as positive trait change directly, and it was not consistent with PTG. Individuals in the control group showed increases in the trait, but agreeableness remained stable among individuals with trauma exposure. Yet, we found greater variance in agreeableness in the trauma group, indicating that individuals in the trauma group differed more dramatically from each other in change in trait agreeableness relative to individuals in the control group. Findings were also not consistent with PTG theory when examining the influence of key intrapersonal and social conditions. Contrary to our hypotheses, we observed declines in agreeableness among individuals with trauma exposure and low endorsement of change goals (relative to the control group), and also declines in conscientiousness over time with high trauma centrality. We observed declines in emotional stability, conscientiousness, and openness when examining the influence of social support with high social support predicting positive trait growth only in the control group. Finally, our alternative analyses found no evidence of non-linear (quadratic) trait change, nor evidence to suggest self-enhancement coping was happening in the absence of trait change, because individuals with trauma exposure did not differ in their motivations to change their traits at wave 1 or over time compared to control participants.

Despite not finding evidence to support the notion of PTG as positive personality trait change, our results offer important insights into both the theoretical and methodological considerations researchers interested in PTG need to consider in their future work, and contribute further understanding on the challenges and opportunities for studying PTG as positive personality change (Jayawickreme et al., 2021). First, our results showing that the experience of adversity does not, on average, result in patterns of trait change reflective of PTG is consistent with recently published research. Researchers consistently observed stability (on average) over periods of 1–2 years in personality traits and character traits in response to a diverse array of adverse circumstances (Blackie & Jayawickreme, 2022). Yet, despite this stability, researchers did find significant individual variability in the rates of change. We similarly observed this in the trait of agreeableness, suggesting that while positive personality trait change may not be ubiquitous, there are individual differences for researchers to explore. Thus, methodological approaches that aim to identify the sub-groups that show a PTG trajectory and explore predictors of membership to this trajectory (Chopik et al., 2022) present one possible direction that researchers could take to further understand for whom and why PTG occurs.

Second, although we found no evidence for non-linear (quadratic) relationships in the current study, the literature on stress and coping suggests that researchers should be considering non-linear models. In these accounts, it

TABLE 6 Average centrality of traumatic events predicting trait growth across time

	Outcome: Traits														
	Extraversion			Agreeableness			Conscientiousness			Stability			Openness		
Predictor	*b*	95% CI		*b*	95% CI		*b*	95% CI		*b*	95% CI		*b*	95% CI	
Intercept	0.07	−0.10	0.24	−0.03	−0.20	0.14	−0.06	−0.24	0.12	**−0.23**	−0.39	−0.07	**0.19**	0.03	0.36
Centrality	−0.10	−0.27	0.08	0.09	−0.09	0.26	0.14	−0.05	0.32	0.01	−0.15	0.17	0.00	−0.16	0.17
Month	−0.01	−0.03	0.01	−0.02	−0.04	0.01	**−0.03**	−0.06	−0.01	−0.01	−0.02	0.02	−0.01	−0.03	0.01
Month × Centrality	−0.01	−0.03	0.01	0.01	−0.01	0.03	**−0.03**	−0.06	−0.01	−0.02	−0.00	0.04	−0.01	−0.03	0.01

Note: This table contains data only from participants in the trauma group, as participants in the control group did not rate the centrality of any traumatic events. Ninety-five percent confidence intervals for parameters in **boldface** do not contain zero. Centrality = the average centrality across all reported traumatic events.

TABLE 7 Maximum centrality of traumatic events predicting trait growth across time

	Outcome: Traits														
	Extraversion			Agreeableness			Conscientiousness			Stability			Openness		
Predictor	*b*	95% CI		*b*	95% CI		*b*	95% CI		*b*	95% CI		*b*	95% CI	
Intercept	0.07	−0.10	0.24	−0.03	−0.20	0.14	−0.06	−0.24	0.11	**−0.23**	−0.39	−0.07	**0.19**	0.03	0.36
Centrality	−0.11	−0.29	0.06	0.16	−0.01	0.33	0.18	−0.00	0.36	0.01	−0.16	0.18	0.00	−0.17	0.16
Month	−0.01	−0.03	0.01	−0.02	−0.04	0.01	**−0.03**	−0.05	−0.01	−0.01	−0.03	0.02	−0.01	−0.03	0.01
Month × Centrality	−0.01	−0.03	0.01	−0.01	−0.04	0.01	**−0.04**	−0.07	−0.02	−0.01	−0.03	0.01	−0.02	−0.04	0.00

Note: This table contains data only from participants in the trauma group, as participants in the control group did not rate the centrality of any traumatic events. Ninety-five percent confidence intervals for parameters in **boldface** do not contain zero. Centrality = the *maximum* centrality of any event that a participant reported experiencing.

TABLE 8 Interaction between trauma and perceived social support in predicting trait growth across time

	Outcome: Traits											
	Extraversion			Agreeableness			Conscientiousness			Stability			Openness		
Predictor	*b*	95% CI		*b*	95% CI		*b*	95% CI		*b*	95% CI		*b*	95% CI	
Intercept	−0.11	−0.26	0.05	−0.01	−0.17	0.14	0.02	−0.14	0.18	0.15	−0.01	0.30	−0.10	0.26	0.05
Support	**0.28**	0.12	0.45	**0.26**	0.07	0.40	0.16	−0.01	0.32	**0.25**	0.09	0.42	0.06	−0.11	0.22
Month	−0.01	−0.03	0.00	**0.03**	0.01	0.05	−0.02	−0.04	0.00	0.01	−0.01	0.03	**−0.03**	−0.05	−0.01
Month × Support	−0.01	−0.03	0.01	0.01	−0.02	0.03	0.02	−0.00	0.04	**0.02**	0.00	0.04	0.01	−0.01	0.03
Trauma	0.28	0.06	0.51	−0.04	−0.26	0.18	−0.05	−0.27	0.17	**−0.31**	−0.53	−0.09	0.30	0.08	0.52
Trauma × Support	−0.15	−0.36	0.07	−0.21	−0.43	0.01	**−0.22**	−0.44	−0.00	**−0.23**	−0.45	−0.02	−0.01	−0.22	0.21
Month × Trauma	0.00	−0.03	0.02	**−0.04**	−0.07	−0.01	−0.02	−0.05	0.01	−0.02	−0.04	0.01	0.02	−0.01	0.05
3-Way Interaction	0.01	−0.02	0.03	−0.01	−0.04	0.02	**−0.04**	−0.06	−0.00	**−0.05**	−0.07	−0.02	**−0.04**	−0.06	−0.01

Note: Ninety-five percent confidence intervals for parameters estimates in **boldface** do not contain zero. Support = perceived social support.

is not the occurrence of a single adverse life event that is important, but rather the impact of cumulative lifetime adversity on well-being (Höltge et al., 2018). Research has found U-shaped quadratic relationships between lifetime adversity and well-being, such that it is moderate adversity (relative to none or high adversity) that is associated with higher well-being (Seery et al., 2010). PTG research that has examined non-linear associations has focused on the relationship between distress and PTG; finding stronger evidence for an inverted U-shaped curvilinear relationship, indicating moderate distress is associated with higher PTG (Shakespeare-Finch & Lurie-Beck, 2014). Taken together, and building on recent calls from personality psychologists to examine the impact of life events more dynamically than a simple binary measure of event occurrence (Luhmann et al., 2021), methodological improvements to PTG research should involve measuring reactions to adversity, and comparing the impact of these event characteristics in linear and non-linear models.

In addition to these methodological implications, this study raises two central issues of critical importance to the study of PTG: the definition and operationalization of PTG and the timeline for studying it. Given that our findings were not supportive of our hypotheses, we need to consider if PTG defined, as positive and volitional *trait* change is the optimal operationalization, especially in the short-term. Indeed, the evidence on trait change after significant life events is mixed (Bleidorn et al., 2018), and recent reviews of the application of this research to PTG specifically have argued that a focus on facets and examination of facilitating conditions might be more fruitful than a focus on meta-traits (Jayawickreme et al., 2021). At this point and before considering the theoretical value of an alternative operationalization of personality, we should highlight that we also did not find evidence of volitional trait change in the control condition consistent with past research (Hudson et al., 2019). When examining individuals' motivations to change their traits (i.e., change goals), we observed positive trait change only in agreeableness. In contrast to Hudson et al. (2019), we recruited an online UK community and non-student sample. Although recent research suggests that the motivation to pursue trait change is still relevant in the UK among college students (Baranski et al., 2021), other recent studies have found change goals do not consistently predict trait change over time, and sometimes predict decreases in the corresponding traits (Baranski et al., 2020; Lücke et al., 2020). Thus, research into the boundary conditions for volitional trait change is needed (Lücke et al., 2020) before it can be applied to PTG.

Returning now to the question of the optimal definition of PTG as positive personality change, researchers have argued that a focus on facets might be more appropriate than broad traits, especially in light of the

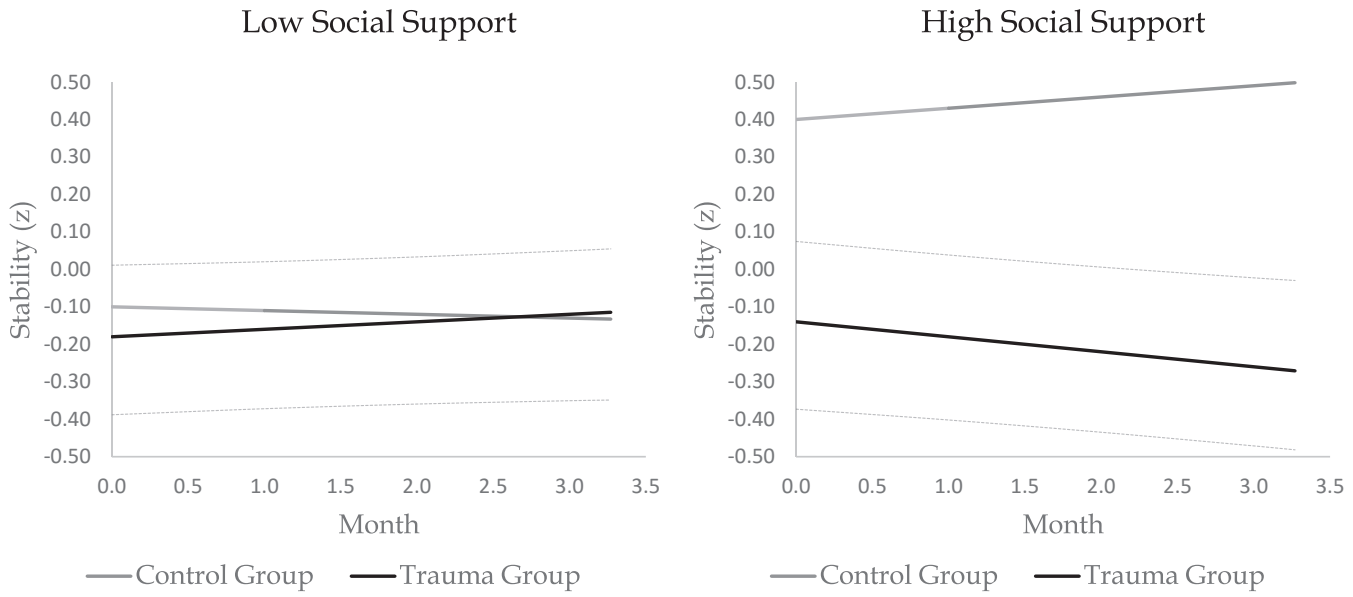

FIGURE 3 Trauma and Social Support Predicting Growth in Personality Traits. Social support was measured at Wave 1. The "low change goals" lines were plotted at 1 SD below the mean. The "high change goals" lines were plotted at 1 SD above the mean. The faint, dashed gray lines depict the 95% confidence bands for the trauma group.

average stability typically observed across multiple studies (Blackie & Jayawickreme, 2022). To return to our example from the introduction, it is possible that the individual's score in the sociability facet of extraversion may increase as a result of their efforts to engage in more social interaction, yet their scores in other facets of extraversion may remain unchanged. If researchers average over and examine the broad trait of extraversion, then PTG might be missed if it manifests in more nuanced and specific facet-level changes. The challenge with this approach is for researchers to identify which facets are likely to change after adversity. Given research has shown no consistent pattern of change at the broad trait-level and individual differences in rates of change (Blackie & Jayawickreme, 2022), a move towards using ideographic methods to study PTG might prove fruitful. In contrast to standard nomothetic approaches as applied in this study, an ideographic approach to personality change focuses uniquely on within-person changes in personality structures (Beck & Jackson, 2022).

The second issue raised by our findings (and many other short-term studies on PTG, more generally) concerns the appropriate timescale with which to study PTG. Due to our funding constraints, we were only able to examine trait change over the short-term (i.e., over 16-weeks and after a trauma that could have occurred up to 1-month prior to wave 1). Although past research has used this timescale and found volitional trait change in the absence of trauma occurring (Hudson et al., 2020), PTG is theorized as a process that gradually unfolds as individuals overcome their traumatic experience (Tedeschi & Calhoun, 2004). In this respect, it is reasonable to assume individuals' functioning may decline initially after a trauma (as we observed in our study under certain conditions) and may first re-stabilize before individuals are in a fit psychological state to change aspects of their personalities. This reinfoces the importance of studying non-linear patterns of change in this area. In addition, a longer timescale would be beneficial to examine how the measured intrapersonal and social conditions influence and change the process over time. For example, we saw declines in trait conscientiousness across the study when the trauma was high in centrality and life altering, but it is unclear if this pattern would persist over the longer term. Most studies of PTG, including ours, fail to capture this dynamic process over a moderate to long-term perspective.

In support of this longer-term view, Mangelsdorf et al. (2019) concluded that studies with timescales of at least 18–24 months had the highest likelihood of observing PTG on the basis of their longitudinal meta-analysis. Yet, longitudinal research with breast cancer survivors over 18-months of treatment observed that trajectories of (perceptions of) PTG remain stable and trait-like among some women (Danhauer et al., 2015). Thus, research with a longer timescale is integral to advancing PTG research, but it is equally important that the operationalization of PTG permits measurement on a full continuum of negative to positive changes to elucidate the pathway to PTG. The trait operationalization offers

TABLE 9 Trauma predicting change goals across time

	Outcome: Traits											
	Extraversion			Agreeableness			Conscientiousness			Stability			Openness		
Predictor	*b*	95% CI		*b*	95% CI		*b*	95% CI		*b*	95% CI		*b*	95% CI	
Intercept	0.00	−0.16	0.16	0.01	−0.14	0.17	−0.05	−0.21	0.11	−0.04	−0.20	0.11	0.00	−0.16	0.16
Trauma	0.01	−0.21	0.24	0.19	−0.04	0.42	0.18	−0.04	0.41	**0.25**	0.03	0.48	0.10	−0.12	0.33
Month	0.01	−0.04	0.06	**−0.08**	−0.14	−0.02	−0.02	−0.08	0.05	−0.06	−0.13	0.01	−0.04	−0.10	0.03
Month × Trauma	−0.04	−0.11	0.04	−0.02	−0.11	0.07	−0.02	−0.11	0.07	−0.02	−0.11	0.07	0.01	−0.08	0.10

Note: Ninety-five percent confidence intervals for parameters in **boldface** do not contain zero. Trauma = trauma group versus control group.

this advantage over many original questionnaire assessments of PTG (although see Boals & Schuler, 2018).

This study is not without limitations. We have already discussed the limitations of the short timescale of studying PTG over 16-weeks. However, this study was also limited in that we did not use a prospective design. PTG is defined as positive change from pre-to-post trauma, and therefore the gold standard design has to involve mapping longitudinal change in individuals while accounting for pre-trauma baseline levels. It is worth noting however that past PTG research using prospective designs is limited by short timescales and/or a focus on challenging (rather than traumatic) events that might not be impactful enough to facilitate PTG processes (Blackie & McLean, 2022; Frazier et al., 2009). In an attempt to address this limitation, we did recruit a matched control group of individuals who had not experienced trauma in the past 12-months to allow us to compare against. In doing this, we saw that contrary to study hypotheses it was the control condition that evidenced trait growth in some traits (e.g., conscientiousness, openness to experience and emotional stability), but only under conditions of high perceived social support. This demonstrates the importance of employing appropriate comparison groups ideally even when prospective designs are feasible.

In conclusion, we did not find evidence that recent trauma exposure results in PTG when it is assessed as positive personality trait change (Jayawickreme & Blackie, 2014), even when examining some key intrapersonal and social conditions expected to facilitate these changes. Instead, we observed patterns of either stability or decline in traits after trauma exposure in the 16-weeks study duration (relative to the control condition). Yet, our results have importance implications for the study of PTG, specifically with reference to level of personality traits we examine PTG at, and the methods we used to examine these research questions.

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AUTHOR CONTRIBUTIONS

LB and NH, Study design. LB, Data collection. NH, Analysis. LB and NH, Interpretation of data. LB and NH, Drafting of manuscript. LB and NH, Revisions. Both authors approved the final version of the paper.

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CONFLICT OF INTEREST

The authors disclosed no conflicts of interests.

ETHICS APPROVAL STATEMENT

University of Nottingham, The School of Psychology Ethics Committee approved this procedure and data collection (REF: F1054 & F0160).

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ENDNOTE

[1] The pre-registration outlines the research questions and data analytic plan.

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