

Connecting the self to traumatic and positive events: links to identity and well-being

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ABSTRACT

Self-event connections in autobiographical narratives help integrate specific episodes from memory into the life story, which has implications for identity and well-being. Previous research has distinguished differential relations between positive and negative self-event connections to psychological well-being but less research has examined identity. In this study, examining self-event connections in emerging adults' narratives, 225 participants narrated a traumatic and an intensely positive experience and completed questionnaires assessing identity development and well-being. Participants who described more negative connections to self overall had higher psychological distress and identity distress, compared to those who described fewer negative connections. Participants who described positive connections to the self in traumatic events were more likely to have lower psychological distress, higher post-traumatic growth, and higher identity commitment, whereas positive connections in positive events was related to higher identity exploration and marginally higher post-traumatic growth. These findings contribute to a growing body of literature that suggests linking autobiographical memories to self can have differential effects on identity and well-being depending on the valence of the event and the connections made.

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The construction of meaning from autobiographical memories is a complex cognitive task. It includes multiple aspects of narrative and reflective skill believed to be critical for healthy identity development and psychological well-being (Bauer & McAdams, 2004; Waters, Shallcross, & Fivush, 2013). One particularly important type of autobiographical meaning-making is autobiographical reasoning, which includes self-event connections (Habermas & Bluck, 2000; Habermas & Paha, 2001). These are defined as explicit statements made within a narrative that link the experience to an enduring aspect of self (Pasupathi, Mansour, & Brubaker, 2007). A self-event connection may provide a link to a disposition (e.g., "I am a kind person"), or a value (e.g., "We should care about other living beings"), or it may be a statement about change, such as growth (e.g., "That made me a stronger person") or outlook (e.g., "Now I see the world differently"). As described by Pasupathi et al. (2007), self-event connections are a critical component in the process of integrating memories from single episodes into a narrative identity. Similarly, McLean and Fournier (2008) postulated that self-event connections that explicitly link the self and the event together through narrative provide a representation of identity emerging from personal experiences. Examining instances of self-event connections within narratives of single episodes may be especially important during

adolescence and emerging adulthood, when identity exploration and commitment is a key developmental task (Arnett, 2000; Erikson, 1968). To date, few studies have empirically examined narrative self-event connections in relation to identity processes and psychological well-being, particularly during this important developmental period. Thus, the major objective of this study is to more systematically examine self-event connections in relation to both identity and well-being. We examine positive and negative self-event connections, in both highly positive and traumatic event narratives because self-event connections may be differentially related to well-being and identity depending on valence of the event and the connection made. To develop this reasoning in more detail, we present the limited research to date.

Although there are as yet few studies explicitly examining self-event connections, some prior research has explored related ways that individuals describe changes in the self resulting from positive and negative life experiences that may have implications for well-being and identity development (see Lilgendahl, 2015, for a review). For example, adults narrating about transition experiences who included themes of communal growth had higher psychological well-being and life satisfaction (Bauer & McAdams, 2004). Likewise, emerging adults who described gaining insight about the self by reflecting on past

experiences, compared to those who did not, scored higher on identity maturity and well-being (McLean & Pratt, 2006; Waters, 2014; Waters & Fivush, 2014). Specific to positive events, McLean and Lilgendahl (2008) found that emerging adults who viewed high-point stories as self-defining had higher levels of psychological well-being compared to those who did not. On the other hand, life stories which depict negative implications to self may have detrimental effects. For example, individuals who recounted life narratives in which positive events transform to negative outcomes, called a contamination sequence, were shown to have decreased satisfaction with life, decreased self-esteem, and increased depression (McAdams, Reynolds, Lewis, Patten, & Bowman, 2001). Yet, individuals who narrate low-point events as having positive endings scored higher in the story's identity function and in their psychological well-being (McLean & Lilgendahl, 2008). Thus, how individuals narrate both positive and negative life events may influence how they view the self and consequently, their psychological well-being.

The most comprehensive study examining relations between self-event connections and well-being in emerging adulthood was conducted by Banks and Salmon (2013). They distinguished self-event connections that expressed positive self and growth (e.g., "I am a good person" and "I learned that it is OK to reach out to people") versus self-event connections that expressed a negative sense of self and distressing insights derived from events (e.g., "I am a terrible person" and "I just don't trust people any more"). They further examined these self-event connections in narratives of both high and low emotional experiences. They found that, in low-point narratives, more negative self-event connections were related to higher psychopathology and more positive self-event connections were related to lower psychopathology. This suggests that more connections to self are not always better if the conclusion that is reached negatively reflects on the self. Further, fewer negative connections in low-point and high-point narratives, and more positive connections in high-point narratives were related to increased positive psychological well-being, suggesting that narrative meaning which reflects more positively on the self could be linked to positive psychological growth.

Banks and Salmon (2013) present an important set of findings regarding positive and negative self-connections in autobiographical narratives in relation to well-being. In the present study, we build on the existing literature to test critical theoretical assertions in three ways. First, rather than solely measuring generalised well-being, we measured positive growth directly connected with the specific event narrated. This nuance is important in order to explicitly assess theoretical assertions about the role of individual episodes in identity and well-being (McLean & Fournier, 2008; Pasupathi et al., 2007). Second, to assess theoretical relations between self-event connections and identity, we explicitly measured identity; we examined positive and negative narrative self-event connections in

relation to positive identity exploration and commitment, as well as to distress in the identity development process. Third, we asked participants to narrate both positive and traumatic events. Self-event connections, especially positive connections, when narrating highly positive experiences may help create a sense of well-being and healthy identity. At the same time, narrating stressful and traumatic experiences that are difficult to process may create a challenge from which individuals grow in self-understanding (Banks & Salmon, 2013). As stressful and traumatic experiences involve events in which the self is placed in some kind of risk (e.g., physical harm, or social threat), they represent moments of vulnerability which may challenge one's sense of agency. Such moments provide opportunities for self-reflection. Individuals may feel motivated to reconcile this negative event that has occurred with their identity in order to maintain a sense of positive well-being. This may require additional cognitive effort; individual differences such as personality traits may moderate the extent to which individuals spontaneously do this (McLean & Fournier, 2008), but the ability to do so may lead to growth. Indeed, the ability to create positive self-event connections when narrating stressful experiences may be related to more positive identity and growth processes, whereas making more negative self-event connections may be related to both psychological and identity distress (e.g., Banks & Salmon, 2013). Thus, we expected that making positive self-event connections from traumatic experiences would be linked to post-traumatic growth whereas making negative self-event connections would be related to psychological distress.

Finally, we examined possible gender differences. Gender has been shown to be an important variable in autobiographical narratives and possibly in narrative identity (see Fivush & Zaman, 2013, for a review). More specifically, beginning in early childhood and throughout adulthood, females tell personal narratives that are more elaborated and emotionally expressive than do males (see Gryzman & Hudson, 2013, for a review). Although many studies do not find differences in autobiographical reasoning, a few studies have found that adolescent females engage in more evaluation and reflective insight in telling their stories than do males, which may be related to self-event connections (Fivush, Bohanek, Zaman, & Grapin, 2012; Pasupathi & Wainryb, 2010).

Thus, the major objective of this study is to examine self-event connections in traumatic and highly positive personal narratives in relation to both positive and negative processes related to identity and well-being. For identity, we conceptualised positive identity processes as identity exploration and commitment, measured through the Ego Identity Process Questionnaire (EIPQ); negative identity processes were conceptualised as distress specific to exploring identity, through the Identity Distress Survey. We hypothesised that individuals who express more positive self-connection in both negative and positive narratives would show higher positive identity exploration and

commitment, while individuals who express more negative self-event connections would show higher levels of identity distress. For well-being, we assessed psychological distress as depression and anxiety, as these have been found to be related to other aspects of narrative meaning-making (see McLean & Greenhoot, 2013, for a review). We assessed psychological growth using the Post-Traumatic Growth Inventory (PTGI) (Tedeschi & Calhoun, 1996) that assesses the extent to which individuals use difficult experiences as a springboard for positive growth. We predicted that individuals who express more negative self-event connections, especially for stressful and difficult experiences, would show lower levels of psychological well-being more broadly, measured as higher levels of general anxiety and more depressive symptoms, whereas individuals who expressed more positive self-event connections in trauma narratives would show higher levels of psychological growth. Gender was a variable of exploratory interest given previous research, but we made no specific predictions.

Method

Participants

As part of a larger study, 225 participants (110 female, mean age = 19.2 years) were recruited from introductory psychology courses, gave fully informed consent, and received course credit. Participants self-reported ethnicity was 67.6% Caucasian, 12% East Asian, 7.6% African-American, 4% South Asian, 2.2% Hispanic, and 6.7% multiple or other origin. One participant's data were missing for one narrative but was included in analyses when possible. All procedures were approved by the University Institutional Review Board.

Procedure

Participants gathered in groups of 5–10 in a large on-campus classroom, seated several spaces away from each other for privacy. Participants completed a workbook comprised of narrative instructions and questionnaire measures. For traumatic events, participants wrote about “the most traumatic experience” of their life. They were told they might include the facts of the event as well as their deepest thoughts and feelings, and there was no time limit. For intensely positive events, participants were asked to write about “the most positive experience” of their life with the same instructions. The order of narratives was counterbalanced. The PTGI (described below) was completed immediately following traumatic event narratives. The remaining questionnaires were completed between the two narratives. Participation typically lasted 90–120 minutes.

Questionnaire measures

Questionnaire measures were selected to assess both psychological distress and psychological growth, as well as identity distress and identity growth.

Psychological distress

The Beck Depression Inventory (BDI), a widely used measure assessed depression symptomology in a 21-item format (Beck, Steer, & Garbin, 1988). Item responses correspond to the extent to which participants feel they are experiencing a particular aspect of depression on a scale of 0–3. For example, for “sadness”, responses range from 0: “I do not feel sad” to 3: “I am so sad or unhappy I can't stand it.” Internal consistency ranges from .73 to .92 with nonclinical samples (Beck et al., 1988).

State-Trait Anxiety Inventory for Adults (STAI) is a 40-item scale which assessed both state and trait anxiety (Spielberger, Gorsuch, Lushene, Vagg, & Jacobs, 1983) using a 4-point scale (from “almost never” to “almost always”). We utilised the 20-items that correspond to trait anxiety (for example, “I worry too much over something that really doesn't matter”). Internal consistency ranges from .86 to .95 and test–retest reliability ranges from .65 to .75 over two months (Spielberger et al., 1983).

Psychological growth

PTGI. The PTGI is a 21-item scale measuring the subjective sense of positive personal growth following a traumatic event (Tedeschi & Calhoun, 1996). Items are scored on a 6-point scale ranging from 0 (“I did not experience this change as a result of my crisis”) to 5 (“I experienced this change to a very great degree as a result of my crisis.”) Items are summed for a total score. Tedeschi and Calhoun reported acceptable internal consistency, test–retest reliability, and concurrent and discriminant validity.

Identity distress

Identity Distress Survey. This 10-item scale measured the extent to which participants report distress from unresolved identity issues (Berman, Montgomery, & Kurtines, 2004). Participants rate on a scale of 1 (not at all) to 5 (very severely) the degree to which they have experienced upset, distress, or worry over life issues such as goals, friendships, sexual orientation, religion, and so on. Internal consistency of .84 and test–retest reliability of .82 were reported as well as convergence with other measures of identity development (Berman et al., 2004). We utilised the global score (i.e., averaged responses).

Identity growth

EIPQ. Participants report on 32 items the extent to which they have engaged in identity exploration and commitment, respectively. Correspondingly, totals from subscales yield two scores. Responses were recorded on a likert scale of 1 (i.e., strongly disagree) to 6 (i.e., strongly agree), in response to items such as “I have definitely decided on the occupation I want to pursue” and “I have not felt the need to reflect upon the importance I place in my

family" (reverse scored). Consistency for commitment was reported at .75 and for exploration was .76 (Balistreri, Busch-Rossnagel, & Geisinger, 1995). For the purposes of this study, we did not examine categorical classification of participants' identity statuses, but rather examined these scores as two separate, continuous variables revealing of identity processes.

Narrative coding

Self-event connections were coded from an adaptation of Banks and Salmon (2013). A trained research assistant identified every instance in which participants explicitly referenced a link between their experiences and the current sense of self. Self-event connections included Dispositions (e.g., "I am the type of person who ..."), Values (e.g., "... which is wrong of me ..."), Outlook (e.g., "You see the world differently"), Personal Growth ("It has caused me to mature very quickly"), and Intimacy ("I have a really tight, close-knit group of friends."). Connections were subcoded as "positive" (e.g., "I became a stronger person") or "negative" (e.g., "I realized you can't trust anybody") according to how the narrator appeared to view the connection in context. The first author trained a research assistant and then established reliability on a new subset (20%) of the narratives, at which point the research assistant coded the remainder of the corpus. Cohen's kappa overall was .84, indicating high agreement ($k = .95$ for valence distinction). Due to the low number of self-event connections within each category (similar to Banks & Salmon) we combined across categories into total scores for positive connections to self and negative connections to self.

Results

Preliminary analyses

Means and standard deviations for the variables are presented in Table 1, split by gender. We ran *t*-tests to assess gender differences in well-being and identity. Females scored higher than males on depression, anxiety, identity distress, and identity exploration. To examine whether males and females differed in number of self-event connections, whether traumatic and positive narratives differed in number of self-event connections, and whether the number of positive and negative connections differed, we conducted a 2 (Gender) \times 2 (Narrative Type) \times 2 (Self-event Connection valence) mixed-effect ANOVA, which revealed a main effect of connection valence, $F(1, 218) = 108.21$, $p < .001$, $\hat{h}^2 = .33$, and an interaction between narrative type and connection valence, $F(1, 218) = 68.78$, $p < .001$, $\hat{h}^2 = .24$. Overall, there were more positive self-event connections than negative. Further, as would be expected, there were more negative connections in trauma event narratives than in positive event narratives. There

were no gender differences in number of self-event connections, and no other significant interactions.

Associations between self-event connections, psychological distress, growth, and identity

Bivariate associations between the narrative and questionnaire variables, with ranges, means and standard deviations, are presented in Table 2. For the trauma narratives, negative self-event connections were positively related, and positive self-event connections were negatively related to depression and anxiety; positive self-event connections were also positively related to psychological growth and identity commitment. For the positive event narratives, positive self-event connections were related to growth and identity exploration. Also of interest, anxiety and depression were positively related to identity distress, and anxiety was negatively related to identity commitment. At the same time, psychological growth was positively correlated with both identity distress and growth, suggesting that grappling with identity is related to both stress and growth. Identity distress and exploration were also positively related, supporting the idea that identity exploration can be distressing. Identity distress and exploration were negatively related to identity commitment, suggesting individuals who display commitment are less likely to be grappling with identity issues.

Given the many bivariate correlations, we ran a series of regression analyses examining the amount of variance in psychological distress, post-traumatic growth, and identity distress, exploration and commitment accounted for by self-event connections in autobiographical narratives of trauma and intensely positive events (Table 3). Because of the high intercorrelations between the depression and anxiety measures, which were both conceptualised as psychological distress, we computed a composite variable using those two scales ($\alpha = .87$). Gender was included in the first step of all regression analyses as a control given its significant associations with the majority of the dependent variables.

The model for psychological distress was significant. Females showed more overall distress than males, and narrators who made more negative and fewer positive self-event connections in their trauma narratives showed higher levels of distress. For psychological growth, females showed more growth overall than males; individuals who made more positive self-event connections in their trauma narratives showed higher levels of growth, and there was a trend in this direction for the positive narratives as well. For identity distress, the model was again significant. Females showed more identity distress than males, and there was a trend such that individuals who made more negative self-event connections in both the traumatic narratives and the positive narratives showed higher levels of identity distress. For identity exploration, gender was significant, and more positive self-event connections in the positive narrative was related to higher identity exploration.

Table 1. Means (and standard deviations) split by gender, and associated *t*-test values.

		Males	Females	<i>t</i>	<i>p</i>
<i>Measures</i>	BDI	8.70 (6.88)	12.44 (10.29)	3.13	.002
	DES	17.37 (12.36)	18.87 (12.73)	0.89	.37
	State-trait anxiety	38.62 (10.58)	43.03 (12.13)	2.88	.004
	Identity distress	2.67 (0.99)	3.09 (1.05)	3.08	.002
	Identity exploration	59.06 (8.85)	61.72 (8.20)	2.31	.02
	Identity commitment	58.73 (10.58)	57.88 (9.57)	0.62	.53
	PTGI	65.62 (23.33)	71.43 (19.05)	2.02	.05
<i>Self-event connections</i>	Negative connections in Trauma narratives	0.87 (1.58)	1.08 (1.52)		
	Positive connections in Trauma narratives	1.13 (1.57)	1.21 (1.60)		
	Negative connections in Positive narratives	0.12 (0.50)	0.15 (0.49)		
	Positive connections in Positive narratives	1.63 (1.46)	2.06 (1.91)		

Note: Standard deviations in parentheses.

Finally, for identity commitment, gender was not significant, and those individuals who made more positive self-event connections in their trauma narratives showed higher levels of identity commitment.

Discussion

In this study, we examined relations among self-event connections in narratives and psychological well-being and identity. We extend the current literature by examining both positive and negative self-event connections in narratives of both positive and negative experiences, as well as demonstrating theoretically predicted relations to positive and negative aspects of well-being and identity. Perhaps not surprisingly, individuals who express more negative self-event connections when narrating highly stressful experiences show higher levels of psychological distress and identity distress. In contrast, individuals who express more positive self-event connections when narrating highly stressful and highly positive experiences show higher levels of psychological growth and identity commitment. In addition, narrating more positive self-event connections in highly positive experiences is also related to higher levels of psychological growth and identity exploration and commitment. Although these patterns hold across gender, we also found that females generally show higher levels of psychological and identity distress as well as higher levels of psychological growth and identity exploration overall. These patterns suggest that the way in which individuals create meaning for the self from their experiences relates to their identity and well-being.

To more fully understand these patterns, bivariate relations among the variables need to be considered. Psychological well-being and identity were related in meaningful ways. Within identity, individuals who expressed more identity distress also expressed more exploration, suggesting they are struggling with identity issues, and, indeed, they show lower identity commitment. In turn, individuals reporting identity distress also report higher psychological distress, but intriguingly, also higher levels of psychological growth, suggesting a pattern of striving after meaning which is simultaneously distressing and growth motivating. These results may reflect that identity work can be both distressing and growth promoting

(Lilgendahl, 2015; Luyckx et al., 2008); however, our finding should be interpreted with caution in light of findings by Frazier et al. (2009) suggesting that growth as measured by the PTGI may not reflect actual growth but rather perception of growth, or some combination of the two.

In line with previous findings, the associations between negative self-event connections in trauma narratives and psychological and identity distress suggests that narrative meaning-making is not always beneficial (see McLean & Greenhoot, 2013, for a review). In contrast, the ability to conceptualise stressful events in light of positive characteristics, outlook, or growth of the self may reduce the amount of distress derived from the event, and thus may be related to higher levels of identity exploration and commitment. Together, the findings suggest that the ability to create positive meaning, especially from negative experiences, allows for both psychological and identity growth.

The ability to create positive meaning from negative experiences may be similar to McAdams' (2006) conceptualisation of redemptive narratives, in which an individual encounters life difficulties but emerges stronger and empowered after working through them. However, the trending link between positive connections in the positive story and post-traumatic growth suggests that the tendency to do so may generalise beyond events of trauma. This may reflect individual differences, such that some individuals are more likely than others to create redemptive sequences. This interpretation is supported by McLean and Fournier's (2008) finding that extraversion is related to making more positive self-event connections overall. As suggested by Lilgendahl (2015), more research should include personality and individual difference variables that will elucidate if and how specific individuals may be better able to use self-event connections in ways that facilitate identity and psychological growth.

Importantly, in support of Pasupathi et al.'s (2007) theory that identity development is related to self-event connections, we found that identity exploration was related to positive connections in positive events, and that identity commitment was related to positive connections in traumatic events. This suggests that making positive self-event connections may be a sign of identity development, but further suggests that connections in

Table 2. Intercorrelations between self-event connections in traumatic and intensely positive event narratives.

	Gender	TE negative connections	TE positive connections	PE negative connections	PE positive connections	Depression (BDI)	Anxiety (STAI)	Identity distress	Post-traumatic growth	Identity exploration	Identity commitment
Gender (male = 1 female = 2)	–										
TE negative connections	.066	–									
TE positive connections	.021	.108	–								
PE negative connections	.039	.086	.108	–							
PE positive connections	.126 [†]	.055	.061	.046	–						
Depression (BDI; 0–49)	.211**	.146*	–.144*	.008	.036	–					
Anxiety (STAI; 19–71)	.191**	.162*	–.139*	.010	.046	.775***	–				
Identity distress (IDS; 7–32)	.204**	.123 [†]	–.083	–.104	.110	.516***	.578***	–			
Post-traumatic growth (21–122)	.136*	.025	.200**	–.053	.150*	.075	.054	.170*	–		
Identity exploration (9–84)	.155*	–.003	–.033	.061	.202**	.048	.072	.197**	.171*	–	
Identity commitment (36–85)	–.042	–.027	.139*	.003	–.098	–.091	–.165*	–.144*	.116 [†]	–.227**	–
<i>M</i> (<i>SD</i>)	–	0.98 (1.55)	1.18 (1.58)	0.14 (.49)	1.85 (1.71)	10.50 (8.86)	40.81 (11.56)	18.11 (12.45)	68.51 (21.45)	60.36 (8.62)	58.31 (10.08)

Note: *N*'s ranged from 214 to 223. TE, traumatic event and PE, positive event.

[†]represents significant at $p > .10$, * $p > .05$, ** $p > .01$, and *** $p > .001$.

Table 3. Regression analyses examining variance accounted for in psychological distress, post-traumatic growth, and identity exploration and commitment by self-event connections controlling for gender.

	Step 1 β	Step 2 β	R^2
<i>DV: psychological distress</i>			
Gender (male = 1; female = 2)	.203**	.193**	.091**
TE – negative connections		.166*	
TE – positive connections		–.164*	
PE – negative connections		.001	
PE – positive connections		.014	
ΔR^2	.047**	.048*	
<i>DV: post-traumatic growth</i>			
Gender (male = 1; female = 2)	.135*	.122†	.080**
TE – negative connections		–.003	
TE – positive connections		.205**	
PE – negative connections		–.087	
PE – positive connections		.117†	
ΔR^2	.018*	.062**	
<i>DV: identity distress</i>			
Gender (male = 1; female = 2)	.193**	.179**	.080**
TE – negative connections		.128†	
TE – positive connections		–.087	
PE – negative connections		–.116†	
PE – positive connections		.091	
ΔR^2	.037**	.043*	
<i>DV: identity exploration</i>			
Gender (male = 1; female = 2)	.145*	.124†	.058*
TE – negative connections		–.019	
TE – positive connections		–.051	
PE – negative connections		.052	
PE – positive connections		.180**	
ΔR^2	.021*	.037†	
<i>DV: identity commitment</i>			
Gender (male = 1; female = 2)	–.064	–.053	.034
TE – negative connections		–.037	
TE – positive connections		.143*	
PE – negative connections		–.003	
PE – positive connections		–.102	
ΔR^2	.004	.029	

†represents significant at $p > .10$, * $p > .05$, ** $p > .01$, and *** $p > .001$.

different types of events may be differentially related to these identity processes. As emerging adults derive positive characteristics, outlook, or growth from the self in stories in which they experienced joy, had a major accomplishment, and so on, this may reflect confidence and self-security to explore possible identities and life choices, similar to Fredrickson's (2004) broaden and build model of positive emotion. In contrast, deriving positive meaning about the self in trauma may indicate that a person has dealt with the challenging implications of trauma in a productive way, becoming more committed to particular values and identities, and having grown from doing so (Barton, Boals, & Knowles, 2013). Interestingly, however, negative connections were unrelated to identity exploration or commitment. Thus, whereas negative self-event connections are related to increasing psychological and identity distress, positive self-event connections are related to increasing psychological growth, identity exploration, and commitment.

Finally, although there were gender differences in many of our measures, there were no gender differences in how

males and females used self-event connections. Females generally showed higher levels of distress, consistent with the literature on gender differences in mental health (Nolen-Hoeksema, 2001). However, females also had higher levels of identity exploration and psychological growth than males. This may reflect gender differences in the process of identity development, although previous research on this topic is mixed and limited (Anthis, Dunkel, & Anderson, 2004). Critically, there were no gender differences in self-event connections and the relations between connections and identity and growth held even after controlling for gender, suggesting that the process is similar for females and males. Still, gender is important to pursue further.

We note that self-event connections were relatively low in frequency, consistent with Banks and Salmon's data (2013). This finding sheds light on narrative meaning-making tendencies in themselves in that it demonstrates that when individuals explicitly provide information about the self in these emotional experiences, they typically only include one or two pieces of information. Although this may pose some statistical challenges, as our findings suggest, even these relatively low frequencies are meaningful. However, perhaps due to this, the effect sizes detected were small.

Further, the analyses presented do not control for word count, following Fivush et al. (2012). As theorised previously, narrative making meaning requires elaboration, and thus, controlling for word count may mask the effect of meaning-making as well. Thus, we emphasise that it is both the type and number of self-event connections that are important to consider when analysing such data, regardless of how lengthy the narrative might be and what other information might be included.¹

Future research should also examine these issues longitudinally. Because this study is a one-time-point correlational study, causal connections cannot be determined. It is possible that psychological and identity growth processes lead one to make certain kinds of meaning from one's experiences, or, the interpretation we prefer, that narrative meaning-making provides the ground from which psychological and identity growth occurs. Although we cannot determine direction here, research on expressive writing (Pennebaker & Seagal, 1999) and from psychotherapy (Adler, Lodi-Smith, Philippe, & Houle, 2015) suggests that narratives lead to growth and not vice versa, but, of course, longitudinal research is needed to examine this in more detail. We note that our sample was college students, a population that may be particularly self-reflective and/or exploratory in their identity journey. It would be interesting to extend this research to more heterogeneous samples, especially community samples, as well as to samples more widely divergent in age to assess possible developmental differences.

¹Note, upon reviewers' request, we have conducted these analyses controlling for word count and found the results remain unchanged.

Overall, our study has replicated and extended previous findings that narrative meaning-making may contribute to the self in both negative and positive ways. Deriving negative meaning about the self may contribute to psychological distress, but deriving positive meaning about the self may contribute to growth and identity development. Further, both positive and negative life events provide opportunities for individuals to engage in this narrative process. Clearly, these findings have important implications both for healthy identity development and for individuals at risk.

Disclosure statement

No potential conflict of interest was reported by the authors.

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