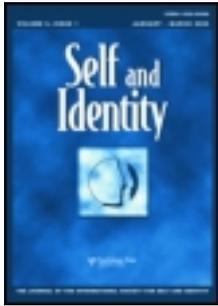


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Exploring Nostalgia's Influence on Psychological Growth

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Prior research shows that the experience of nostalgia—a sentimental longing for the past—serves to buffer self-threat. Complementing this work, the current research assessed the possibility that nostalgia promotes psychological growth—that is, the potential to cultivate inner potentialities, seek out optimal challenges, and integrate new experiences into the self-concept. Two studies tested the effect of experimentally induced nostalgia on growth-oriented self-perceptions and behavioral intentions. To examine whether this effect reflects growth in particular, we built on Fredrickson's (1998, 2001) claim that positive emotion is the prime mechanism underlying growth-promoting experiences. As predicted, nostalgia increased growth outcomes indirectly by increasing positive emotion (Study 1). Study 2 explored which specific psychological resource provided by nostalgia accounts for its positive effect on growth. Prior literature suggested three candidate mediators: belongingness, meaning in life, and positive self-regard. Nostalgia increased all three, but only positive self-regard mediated nostalgia's effect on growth outcomes.

Keywords: Nostalgia; Growth; Motivation; Broaden-and-build theory.

Medical discourse in the seventeenth century considered nostalgia to be a neurological disease caused by extreme homesickness among soldiers fighting on foreign soils (Hofer, 1688/1934). Centuries later, nostalgia was viewed as a psychiatric disorder afflicting depressed individuals (see McCann, 1941; Rosen, 1975). Presently, however, nostalgia has come to be viewed less as a disease and more as a normal yearning for a personally meaningful past (e.g., Davis, 1979; Wildschut, Sedikides, Arndt, & Routledge, 2006).

Consequently, nostalgia has received increasing scholarly attention within the humanities and social sciences (e.g., Davis, 1979; Le Goff, 1992; Pickering & Keightley, 2006). Within psychology, one ongoing line of research examines the subjective experience of nostalgia. For example, Wildschut and colleagues (2006) showed, on the basis of systematic analyses of written narratives, that nostalgia is felt as a sentimental longing or affection for people and events of the personal past (our current working definition). Also, in stark contrast to early notions of nostalgia as abnormal, Wildschut et al. (2006) found that people experience nostalgia on average several times a week and, furthermore, view it as a generally pleasant reflection on progressive trends in their life story. Complementing this view, a recent prototype analysis of the nostalgia concept reveals that features such as *fond memories*, *personal meaning*, *happiness*, and *comfort or warmth*, are associated with lay conceptions of nostalgia to a greater degree than features

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such as *homesickness* and *regret* (Hepper, Ritchie, Sedikides, & Wildschut, 2012). These features of nostalgia were consistent across a wide age range for both European and American participants.

Other emerging lines of research have examined the psychological functions that nostalgia serves for the individual. Until now, the majority of this research has focused on nostalgia's potential to act as a psychological buffer that protects individuals from threatening self-relevant cognitions—what we label a security-providing function. Relevant studies show that nostalgia alleviates feelings of loneliness by increasing perceptions of social support and social connectedness (Wildschut, Sedikides, Routledge, Arndt, & Cordaro, 2010; Zhou, Sedikides, Wildschut, & Gao, 2008). Also, individuals who by disposition experience high (vs. low) levels of nostalgia are less likely to respond to a reminder of their mortality with increased accessibility of death-related ideation and compensatory defense of familiar meaning structures (Juhl, Routledge, Arndt, Sedikides, & Wildschut, 2010; Routledge, Arndt, Sedikides, & Wildschut, 2008). Nostalgia has also been shown to decrease people's tendency to respond to negative performance feedback with compensatory self-enhancement, suggesting that nostalgia buffers against self-esteem threats (Vess, Arndt, Routledge, Sedikides, & Wildschut, 2012). Nostalgia also bolsters a sense that life is meaningful, fair, and ordered (Juhl & Routledge, 2012; Routledge et al., 2011).

Complementing this focus on nostalgia's security-providing function, researchers are beginning to examine whether nostalgia can also serve to promote psychological *growth*—that is, the potential to cultivate inner potentialities, seek out optimal challenges, and integrate new experiences into the self-concept. Indirect support for this possibility is provided by descriptive research showing that people describe nostalgic memories using words indicative of growth, such as *desire*, *change*, and *future* (Hepper et al., 2012). Converging experimental research shows that individuals primed to engage in nostalgia subsequently showed improved adaption to challenging lifestyle transitions, at least in the academic domain. Specifically, Iyer and Jetten (2011) found that first-year university students led to focus on the continuity between nostalgic memories and their current self-concept perceived fewer barriers to their academic success, reported more excitement about starting college, and were more interested in engaging in unfamiliar experiences during college.

The goal of the current research was to further explore nostalgia's potential to promote growth. We designed the studies with two aims in mind. First, we aimed to provide a more direct test of nostalgia's potential to promote growth than has been provided thus far. Second, we aimed to explore which psychological functions of nostalgia account for its potential effect on growth.

Directly Testing the Effect of Nostalgia on Growth

Study 1 aimed to provide a direct test of the hypothesis that nostalgia facilitates growth. Prior tests of this hypothesis are suggestive but limited. Regarding Hepper et al.'s (2012) findings, the common use of growth-related words to describe nostalgic experiences may reflect linguistic conventions rather than significant changes in growth-related self-perceptions and behavioral intentions. Iyer and Jetten (2011) showed that experimentally induced nostalgia promotes growth-oriented outcomes, but their measures referred specifically to the academic domain. Furthermore, they focused on individuals grappling with a particularly stressful lifestyle adjustment (i.e., leaving home and starting college). Therefore, it remains to be assessed whether nostalgia affects global orientations toward

growth and whether this effect holds when individuals are not confronted with the same stressful circumstance.

To address these limitations, we utilized outcome measures that assess global (i.e., domain-general) growth tendencies emphasized by influential theoretical perspectives (e.g., Deci & Ryan, 2000; Maslow, 1954). *Growth-oriented self-perceptions* were assessed by measuring individuals' tendency to view themselves as inclined toward novel experiences, self-expansion, and curiosity. *Growth-oriented behavioral intentions* were assessed by measuring individuals' intentions to engage in novel and self-expansive actions. Additionally, our samples were composed of members of the broader community who were likely facing a variety of life circumstances. We predicted that participants primed with a nostalgic autobiographical memory would report stronger growth-oriented self-perceptions and behavioral intentions than participants primed with a non-nostalgic memory.

In a further effort to establish nostalgia's growth-promotion function, we examined whether the predicted effect of nostalgia bore the hallmark of growth-promoting experiences. To accomplish this, we drew on Fredrickson's (1998) broaden-and-build theory. This theory posits that the experience of positive emotions such as *joy* and *interest* orient self-perceptions and behavioral intentions toward exploration. Over time, a broadening of the person's thought-action repertoire builds lasting and durable resources that can be used for future goal attainment. Empirical support for this claim is provided by numerous studies showing that positive emotions (vs. negative emotions and baseline) facilitate thought patterns and behavioral intentions that are flexible, integrative, and open to new information (Estrada, Isen, & Young, 1997; Fredrickson & Branigan, 2005; Isen & Daubman, 1984; Isen, Daubman, & Nowicki, 1987; see Fredrickson, 2001, for a review of this work).

On the basis of broaden-and-build theory and research, we hypothesized that insofar as nostalgia can promote growth, the predicted effects of nostalgia on growth-oriented self-perceptions and behavioral intentions would occur indirectly by increasing positive emotion. Note that despite consistent evidence that nostalgia increases positive emotion (e.g., Hepper et al., 2012; Wildschut et al., 2006), there has yet to be a clear test of whether nostalgia-induced positive emotion mediates the effect of nostalgia on growth outcomes. In sum, Study 1 was designed to provide a direct test of nostalgia's growth-promotion function by utilizing measures of global growth-oriented tendencies and assessing whether the effect is mediated by a characteristic mediator of growth-promoting experiences.

Functions of Nostalgia as Mechanisms for Growth

Focusing on positive emotion as a mediator is a way of exploring whether nostalgia's effect on growth outcomes reflects a growth-promoting experience in particular. However, positive emotion is a broad construct and therefore does not allow us to uncover which psychological functions of nostalgia may be contributing to nostalgia's growth effects. To address this issue, we designed Study 2 to test the mediating role of three functions of nostalgia shown in prior work to be activated by nostalgic contemplation: belongingness, meaning in life, and positive self-regard (Hepper et al., 2012).

As noted earlier, nostalgia-induced belongingness, meaning in life, and positive self-regard were treated in prior research as providing the individual with psychological security. How might they then relate to growth? To address this question, we drew upon the notion, shared by influential theories of motivation, that security-providing self-views afford individuals a safe haven within which they feel free to explore new possibilities, create, and express other growth-oriented tendencies that might otherwise elicit

uncertainty and anxiety (see Maslow, 1954; Pyszczynski, Greenberg, & Goldenberg, 2003). To elaborate on this notion, next we separately consider three self-views bolstered by nostalgia and summarize prior theory suggesting that, by providing security, each may serve as a psychological basis for the expression of growth.

Belongingness. Attachment theory (see Bowlby, 1988) posits that close relationships serve as a means by which individuals develop a secure base from which to explore the world. Bowlby described how this process operates at early stages of the person's development. When infants feel close to an available, sensitive, and responsive attachment figure, the attachment system triggers feelings of comfort, reassurance, and relief. In this way, infants learn that they can rely on close relationships to regulate their distress and feel secure as they explore novel environments. Recent theorizing has suggested that the attachment system remains active over the entire life span, and furthermore broadens to include a network of close others—such as friends and romantic partners (Hazan & Shaver, 1987; Mikulincer & Shaver, 2007). This network of close others serves as a source of trust and security needed to explore the environment, take risks, and learn new things.

Meaning in life. Security can also be gained through perceived meaning in life. At a fundamental level, it would not be possible to explore and grow in the environment if it did not make sense. Along these lines, Baumeister (1992) argued that meaning in life is based, in part, on the extent to which patterns in the environment can be clearly discerned (see also Becker, 1964; King, 2012). The ability to represent, categorize, and store information about the world in meaningful ways facilitates mastery over the environment and reduces the uncertainty associated with exploration.

In a related perspective, terror management theory (Greenberg, Pyszczynski, & Solomon, 1986) posits that meaning provides security by protecting individuals from the threatening prospect of their inevitable death. The theory says that meaning is conferred by investment in a cultural worldview—a shared system of beliefs about the nature of reality shared by a group of people. The cultural worldview offers individuals system for viewing their life as continuing on (either literally or symbolically) after physical death.

As it pertains to growth, terror management theory posits that a secure sense of meaning buffers individuals from feelings of anxiety that might otherwise impair goal-directed action. With existential anxieties held at bay, the person feels more comfortable entertaining novel ideas about reality that would otherwise disturb their anxiety-buffering cultural worldview (Pyszczynski et al., 2003).

Positive self-regard. According to Maslow (1954), feelings of positive self-regard serve as a psychological prerequisite to growth. Self-esteem leads to feelings of self-confidence, worth, and efficacy—all of which engender a sense of security or assuredness in one's ability to realize one's full potential for mastery and discovery.

Terror management theory suggests that self-esteem is the belief that one is living up to standards set by one's cultural worldview and is therefore eligible for cultural routes to literal or symbolic continuance after death. Paralleling its analysis of meaning, the theory views a secure sense of positive self-regard as a psychological prerequisite for growth-oriented tendencies to explore novel ideas about the self, engage in unfamiliar activities, and generally expand one's self-concept. In sum, prior research on the functions of nostalgia shows that it serves to bolster three psychological resources associated with security: belongingness, meaning, and positive self-regard. By conferring security, these functions of nostalgia are theorized to enable the individual to embrace growth-oriented self-perceptions and behavioral intentions that would otherwise elicit uncertainty and anxiety.

The purpose of Study 2 was to test this reasoning. Specifically, we designed Study 2 to test whether nostalgia-induced belongingness, meaning in life, and positive self-regard mediated the predicted effect of primed nostalgia on growth outcomes. We did not have strong *a priori* hypotheses about which of the three functions of nostalgia would play the strongest mediating role because each has been shown to be a marker of security and a basis for growth. Instead, we took a more exploratory approach by simultaneously including all three in a multiple mediation analysis.

Study 1

The aims of Study 1 were to directly test for nostalgia's effect on growth-oriented self-perceptions and behavioral intentions, and to assess nostalgia's growth-promotion function by testing for mediation by positive emotion.

Method

Participants

Participants were 159 adults from the general population (65 male; $M_{\text{age}} = 31.36$ years) who completed an online survey for pay (\$0.25–\$0.50). Participants self-identified as Caucasian (69%), Asian (11%), Black (7%), Hispanic (5%), American Indian (4%), and "Other" (4%). All participants were recruited through the Amazon MTurk website.

Materials and Procedure

Participants completed an on-line survey prepared with Qualtrics software, Version (2013) of the Qualtrics Research Suite. Qualtrics and all other Qualtrics product or service names are registered trademarks or trademarks of Qualtrics, Provo, UT, USA (www.qualtrics.com). The first questionnaire constituted our nostalgia manipulation and was adapted from the materials used in prior studies (Hepper et al., 2012; Routledge et al., 2008; Wildschut et al., 2006, 2010). Participants in the nostalgia condition were first given a definition of nostalgia ("nostalgia is often defined as a sentimental longing or affection for the past") and then asked to bring to mind a nostalgic event from their past. After thinking about the event, participants were asked to write four keywords related to the event, a short description of the event, and how it made them feel. Participants in the control condition were asked to recall and write about an ordinary event from the past.

Manipulation check and positive emotion. Next, participants were presented with 12 words, in random order, describing various positive emotions/feelings (*inspired, happy, bold, joyful, excited, interested, curious, intrigued, proud, at ease, calm, confident*; $\alpha = 0.92$) and were asked to indicate the extent to which they were currently experiencing each emotion/feeling using a 5-point scale (1 = *Slightly or not at all*, 5 = *Quite a bit*). One additional word was *nostalgic*, and this served as a single-item manipulation check.

Growth-oriented outcomes. Two different measures were used to assess psychological growth. First, we included the Curiosity and Exploration Inventory (CEI-II; Kashdan et al., 2009) to assess growth-oriented self-perceptions. Participants were asked to rate their agreement with 10 statements reflecting a perception of the self as someone who relishes in novel, exploratory experiences (sample item: "I am the kind of person who embraces unfamiliar people, events, and places"). Second, we included the Exploration Inventory (EI; Green & Campbell, 2000) to assess growth-oriented behavioral intentions. Participants were asked to rate their agreement with 19 statements reflecting their interest

in engaging in a variety of growth-related behaviors (sample item: “I would like to explore someplace that I have never been before”). Responses to both measures were made on a 7-point scale (1 = *Strongly disagree*, 7 = *Strongly agree*), and both scales showed good internal consistency ($\alpha > 0.89$).

Although scores on these two growth measures were strongly correlated ($r = 0.76$), we believe that it is informative to view these measures as assessing conceptually related but distinct constructs. The CEI-II is a general assessment of a perception that the self is willing to take on challenging and novel experiences, and it does not specify which kinds of behaviors might constitute a challenging or novel experience. By contrast, the EI is a focused assessment of one’s willingness to engage in a variety of specific exploratory activities.

Results

As predicted, independent samples *t*-tests revealed that participants in the nostalgia condition reported feeling more nostalgic than participants in the control condition (see Table 1 for means and significance tests). Furthermore, participants reported stronger experience of positive emotion in the nostalgia condition compared to the control condition.

Also supporting predictions, nostalgia participants endorsed growth-oriented self-perceptions and behavioral intentions to a greater degree than participants in the control condition.

Mediation by Positive Emotion

Next, we conducted separate mediation analyses to test our hypothesis that the effects of nostalgia on self-perceptions and behavioral intentions would be mediated by positive emotion. In this and the following study, the mediation analyses testing our primary hypotheses were originally conducted as moderated mediation analyses. Specifically, we included gender and age separately with condition, as between-groups variables predicting the mediator/s (Model 7; Hayes, 2012). In neither study did we observe any patterns of moderation by gender or age. To simplify our presentation, we do not mention these factors further.

First, using the PROCESS macro for SPSS (Model 4; Hayes, 2012) we regressed growth-oriented self-perceptions onto nostalgia condition with positive emotion entered as the proposed mediator. Ten-thousand bootstrapping resamples were performed. The 95% Confidence Interval (CI) for the effect of nostalgia on self-perceptions via the mediator of positive emotion did not contain zero, *indirect effect* = 0.20 (0.08), 95% CI [0.07, 0.39]. Furthermore, the direct effect of nostalgia on self-perceptions became non-significant after including the mediator (see Figure 1).

TABLE 1 Means across Nostalgia and Control Conditions for Nostalgia, Positive Emotion, and Growth-Oriented Outcomes (Study 1)

	Control <i>M</i> (<i>SD</i>)	Nostalgia <i>M</i> (<i>SD</i>)	<i>t</i> (157)	<i>d</i>
Nostalgia	2.42 (1.42)	4.34 (0.76)	−10.48***	1.69
Positive emotion	2.67 (0.99)	3.35 (0.84)	−4.64***	0.74
Growth-oriented self-perceptions (CEI-II)	4.58 (1.15)	4.94 (1.03)	−2.08*	0.33
Growth-oriented behavioral intentions (EI)	4.91 (0.90)	5.24 (0.86)	−2.36*	0.37

Note: * $p < 0.05$; *** $p \leq 0.001$.

We then submitted behavioral intentions to the same mediation analysis. The 95% CI for the effect of nostalgia on behavioral intentions via the mediator of positive emotion did not contain zero, *indirect effect* = 0.13 (0.07), 95% CI [0.04, 0.27]. Furthermore, the direct effect of nostalgia on behavioral intentions became non-significant after including the mediator (see Figure 1).

Discussion

Supporting predictions, participants led to engage in nostalgic (vs. non-nostalgic) reflection on their personal past subsequently reported increased self-perceptions and behavioral intentions expressive of psychological growth. Also as predicted, nostalgia's effect on increasing growth-oriented self-perceptions was mediated by increased positive emotion. The results of Study 1 contribute to emerging research on nostalgia's growth-promoting function (e.g., Hepper et al., 2012; Iyer & Jetten, 2011) by providing initial experimental evidence that inducing nostalgia increases growth as assessed through direct, domain-general measures of growth-oriented self-perceptions and behavioral intentions. They also establish the growth-promoting function of nostalgia by showing that the effect of nostalgia on self-perceptions and behavioral intentions is mediated by positive emotion, which has been identified in prior research as a characteristic mechanism behind growth-promoting experiences (Fredrickson, 2001).

Nevertheless, because we chose to focus on global positive affect as a mediator, we were unable to address the specific mechanism by which nostalgia's effect on growth occurred. That is, while Study 1 established nostalgia's unique growth function as evidenced by the mediation through global positive affect, it did not address the precise mechanism by which nostalgia might promote growth tendencies. To address this issue,

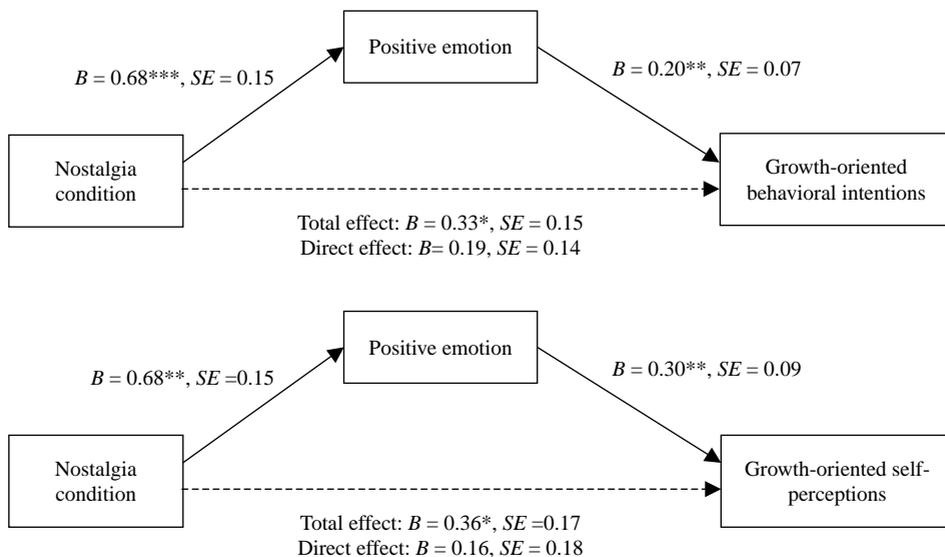


FIGURE 1 Mediation models in which the direct effects of nostalgia condition on growth-oriented outcomes are mediated by positive emotion (Study 1). *Notes:* Nostalgia condition was dummy coded such that 0 = *Control* and 1 = *Nostalgia*. All coefficients represent unstandardized regression coefficients. Dashed lines highlight non-significant relationships and solid lines highlight significant relationships. * $p < 0.05$; ** $p < 0.001$.

we isolated three psychological functions of nostalgia identified in prior research (Hepper et al., 2012) that we believed may serve as a basis for the psychological security necessary for expressions of growth. Specifically, in Study 2 we focused on perceived belongingness, meaning in life, and positive self-regard as mediators of nostalgia's effect on growth.

Study 2

The aims of Study 2 were to corroborate as well as extend the findings from Study 1. Using the same nostalgia manipulation from Study 1, we predicted that thinking and writing about nostalgic, compared to ordinary, autobiographical memories would again bolster growth-oriented self-perceptions and behavioral intentions. Furthermore, we aimed to test for mediation by nostalgia-induced belongingness, meaning in life, and positive self-regard.

Method

Participants

Participants were 121 adults from the general population (54 male; $M_{\text{age}} = 21.38$ years) who completed an online survey for pay (\$0.50). Participants self-identified as White (79%), Hispanic (7%), Black (7%), Asian (6%), and American Indian (1%). All participants were recruited through the Amazon MTurk website.

Materials and Procedure

Through an online survey and using the same materials described in Study 1, participants were first instructed to think and write about either a nostalgic or an ordinary event from their past, depending on condition.

Functions of nostalgia and manipulation check. Next, participants were presented with a 12-item scale, developed by Hepper et al. (2012), measuring three discrete psychological functions of nostalgia: positive self-regard (e.g., "Makes me value myself more"), belongingness (e.g., "Makes me feel connected to loved ones"), and meaning in life (e.g., "Makes me feel life is meaningful"). Participants responded using a 7-point scale (1 = *Strongly disagree*, 7 = *Strongly agree*). All subscales were internally consistent ($\alpha s > 0.88$).

Furthermore, one additional statement was included with the positive emotion subscale—"Makes me feel nostalgic"—and this served as a single-item manipulation check.

Growth-oriented outcomes. As in Study 1, the Curiosity and Exploration Inventory (Kashdan et al., 2009) and the Exploration Inventory (Green & Campbell, 2000) were used to assess growth-related self-perceptions and behavioral intentions, respectively. Both scales showed good internal consistency ($\alpha s > 0.88$).

Results

Independent samples *t*-tests revealed that participants in the nostalgia condition reported feeling more nostalgic than participants in the control condition (see Table 2 for means and significance tests).

TABLE 2 Means across Nostalgia and Control Conditions for Nostalgia, Functions of Nostalgia, and Growth-Oriented Outcomes (Study 2)

	Control <i>M (SD)</i>	Nostalgia <i>M (SD)</i>	<i>t</i> (119)	<i>d</i>
Nostalgia	3.34 (1.95)	6.34 (0.85)	−10.22***	2.00
Functions of nostalgia				
Belongingness	3.27 (1.44)	5.30 (1.39)	−7.76***	1.43
Meaning in life	3.50 (1.60)	5.44 (1.15)	−7.34***	1.39
Positive self-regard	3.91 (1.47)	5.15 (1.40)	−4.65***	0.86
Growth-oriented outcomes				
Growth-oriented self-perceptions (CEI-II)	4.93 (1.06)	5.31 (0.77)	−2.20*	0.41
Growth-oriented behavioral intentions (EI)	5.18 (1.03)	5.54 (0.64)	−2.23*	0.42

Note: * $p < 0.05$; *** $p < 0.001$.

Furthermore, supporting prior research, participants in the nostalgia condition reported greater feelings of belongingness, meaning in life, and positive self-regard compared to participants in the control condition.

Finally, replicating Study 1, nostalgia participants reported higher growth-oriented self-perceptions and behavioral intentions compared to control participants.

Mediation by Functions of Nostalgia

Next, we conducted an exploratory mediation analysis in order to determine which of the functions of nostalgia explained nostalgia's effects on each growth outcome separately. See Table 3 for correlations among all variables included in the models.¹

First, using the PROCESS macro for SPSS (Model 4; Hayes, 2012) we regressed growth-oriented self-perceptions onto nostalgia condition with belongingness, meaning in life, and positive self-regard entered as the proposed mediators. Ten-thousand bootstrapping resamples were performed. Only the 95% CI for the effect of nostalgia on self-perceptions via the mediator of positive self-regard did not contain zero (see Table 4 for tests of the indirect effects). That is, only positive self-regard emerged as a significant mediator of nostalgia's effect on self-perceptions when including both belongingness and meaning in life in the model. Furthermore, the direct effect of nostalgia on self-perceptions became non-significant after including the mediators (see Figure 2).

We then submitted behavioral intentions to the same mediation analysis. Again, only the 95% CI for the effect of nostalgia on behavioral intentions via the mediator of positive self-regard did not contain zero. That is, only positive self-regard emerged as a significant mediator of nostalgia's effect on behavioral intentions when including both belongingness and meaning in life in the model (see Table 4). Furthermore, the direct effect of nostalgia on behavioral intentions became non-significant after including the mediators (see Figure 3).

TABLE 3 Correlations among Functions of Nostalgia and Growth-Oriented Outcomes (Study 2)

Scale	1	2	3	4	5
1. Belongingness	—	0.84**	0.72**	0.21*	0.23**
2. Meaning in life		—	0.75**	0.25**	0.29**
3. Positive self-regard			—	0.32**	0.33**
4. Growth-oriented self-perceptions (CEI-II)				—	0.76**
5. Growth-oriented behavioral intentions (EI)					—

Note: * $p < 0.05$; ** $p < 0.01$.

TABLE 4 Magnitude and Confidence Intervals of the Multiple Mediation Effects of Nostalgia Condition on Growth-Oriented Outcomes through Functions of Nostalgia (Study 2)

	Mediation effect (<i>SE</i>)	Bootstrap results for mediation effects 95% Confidence Interval (CI)	
		Lower	Upper
<i>Mediators: Self-perceptions</i>			
Total effect	0.14 (0.15)	-0.13	0.46
Belongingness	-0.17 (0.18)	-0.51	0.21
Meaning in life	0.05 (0.18)	-0.51	0.21
Positive self-regard	0.27 (0.13)	0.08	0.62
<i>Mediators: Behavioral intentions</i>			
Total effect	0.19 (0.14)	-0.07	0.49
Belongingness	-0.16 (0.18)	-0.50	0.21
Meaning in life	0.14 (0.17)	-0.22	0.47
Positive self-regard	0.22 (0.12)	0.04	0.55

Note: Effects for which the confidence interval does not include zero are considered significant.

Discussion

As predicted and replicating the results of Study 1, participants led to engage in nostalgic (vs. non-nostalgic) reflection on their personal past subsequently reported stronger growth-oriented self-perceptions and behavioral intentions. We also replicated previous research showing that nostalgia serves to bolster perceptions of belongingness, meaning in life, and positive self-regard (see Hepper et al., 2012). Notably, though, only positive self-regard mediated nostalgia's effect on the growth outcomes. Although the impacts of nostalgia on

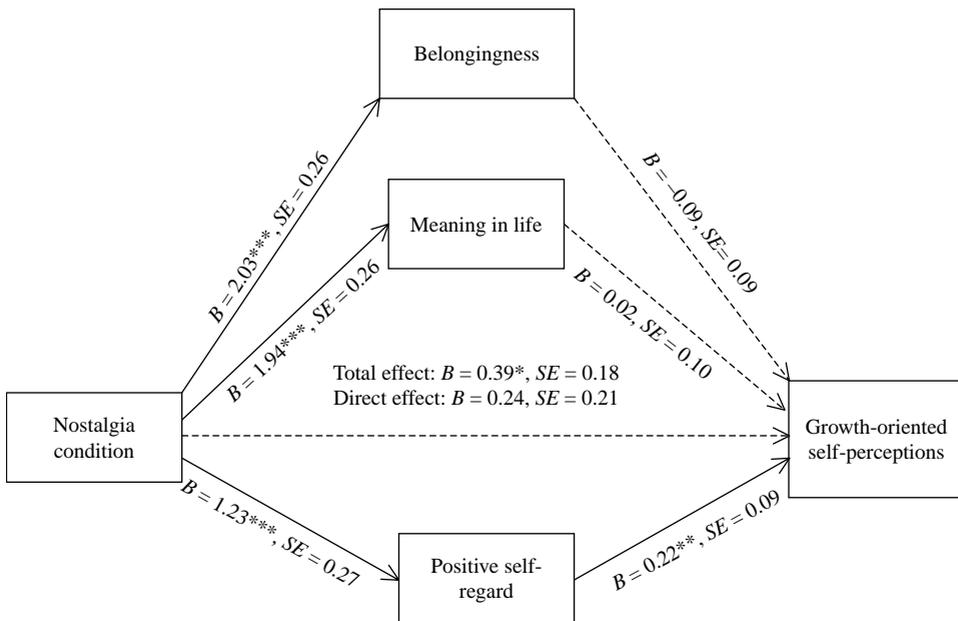


FIGURE 2 Model of the direct effect of nostalgia and self-perceptions with functions of nostalgia as mediators (Study 2). Notes: Nostalgia condition was dummy coded such that 0 = Control and 1 = Nostalgia. All coefficients represent unstandardized regression coefficients. Dashed lines highlight non-significant relationships and solid lines highlight significant relationships. $*p < 0.05$; $**p < 0.01$; $***p < 0.001$.

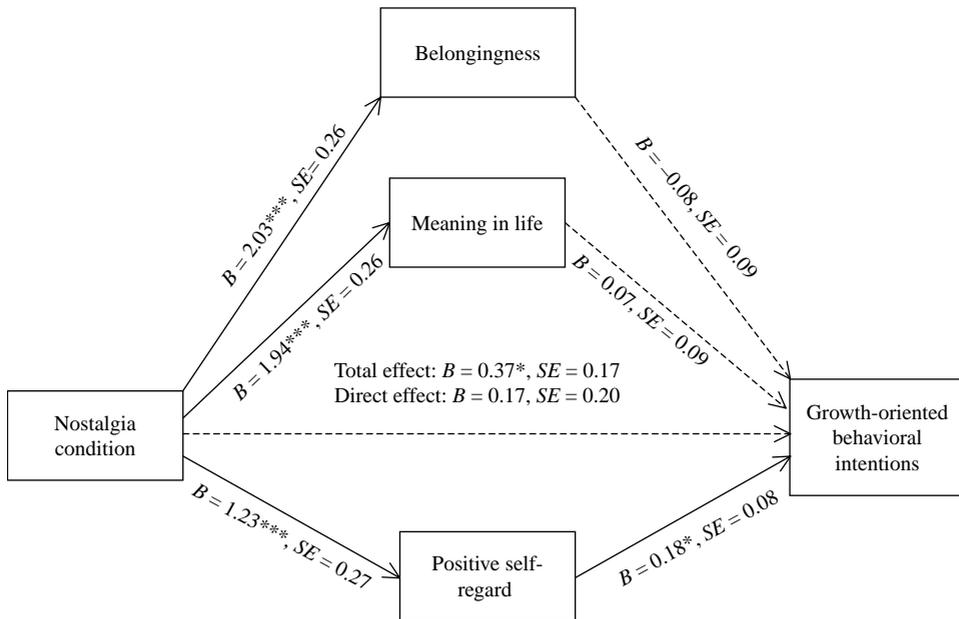


FIGURE 3 Model of the direct effect of nostalgia and behavioral intentions with functions of nostalgia as mediators (Study 2). *Notes:* Nostalgia condition was dummy coded such that 0 = *Control* and 1 = *Nostalgia*. All coefficients represent unstandardized regression coefficients. Dashed lines highlight non-significant relationships and solid lines highlight significant relationships. $*p < 0.05$; $***p < 0.001$.

belongingness and meaning in life are well established (see Routledge et al., 2011) and, accordingly, each was bolstered by nostalgia in the current study, they did not emerge as significant mediators of nostalgia's effect on growth in the multivariate model. This suggests that nostalgia-induced belongingness and meaning serve specifically to bolster security, while nostalgia-induced positive self-regard serves security needs and, in turn, provides a basis for the subsequent expression of growth-oriented tendencies.

General Discussion

The present research examined whether the experience of nostalgia can promote positive psychological growth, thereby complementing prior research emphasizing nostalgia's function in bolstering psychological security. Across two studies, we showed that nostalgia bolsters growth-oriented self-perceptions and fosters the desire to engage in growth-oriented behaviors. In Study 1 we emphasized nostalgia's unique growth-promotion function by providing evidence for mediation by positive emotion—a hallmark of growth-oriented experiences (Fredrickson, 2001). In Study 2, we conducted an exploratory mediation analysis in order to test for the mechanism that accounts for nostalgia's growth-promotion effects. We tested for mediation by belongingness, meaning in life, and positive self-regard and showed that it is only positive self-regard that explains the effect of nostalgia on growth-oriented self-perceptions and behavioral intentions.

These results of these studies add to the burgeoning evidence for nostalgia's psychological benefits by connecting nostalgia to direct and global measures of psychological growth. In previous research, nostalgia was shown to promote domain-

specific growth outcomes for first-year college students and only when participants were primed to perceived continuity between their nostalgia and their current self (Iyer & Jetten, 2010). The present findings go further by showing that nostalgia has the effect of bolstering domain-general growth tendencies across a diverse sample of adult participants. Taken together with the findings of Iyer and Jetten, this line of research reveals that nostalgia can serve as a broad psychological resource for promoting psychological growth.

This means that current theories of psychological growth would benefit by considering nostalgia and nostalgia-inducing contexts as important factors in the growth process. That is, whereas much of the extant growth literature suggests that growth occurs within contexts that support autonomy, competence, and intrinsic motivation (see Deci & Flaste, 1996; Deci & Ryan, 2000), the current research suggests that contexts that uniquely support feelings of nostalgia might also serve to facilitate psychological growth. Furthermore, it is likely that events that are characterized as supporting growth may also be ones for which people develop a sense of nostalgia over time. Indeed, recent research suggests that recalled experiences of authenticity—which are typically characterized as positive events that satisfied psychological needs such as self-esteem—are also rated as nostalgic by participants (Lenton, Bruder, Slabu, & Sedikides, 2012). By serving as a reminder of past events that were growth supportive, nostalgia can be a positive psychological resource for people in situations or environments that have the potential to undermine growth, such as a controlling workplace. In this way, nostalgia acts as a psychological “detour” around circumstances that constrain and suppress the ability to manifest self-determined behaviors and cognitions.

The present research also highlights the indirect effects of nostalgia and positive emotion on downstream functional outcomes of nostalgia. Several instantiations of nostalgia’s definition describe, among its motivational and cognitive components, an emotional component as well (Baker & Kennedy, 1994; Hepper et al., 2012; Stephan, Sedikides, & Wildschut, 2012; Stern, 1992; Wildschut et al., 2006). Despite the general consensus that nostalgia is an emotion, few research studies have focused on the *functional* aspects of nostalgia’s emotional content. While some have described nostalgia as reducing negative affect (e.g., anxiety; Routledge et al., 2008) and bolstering positive affect (Hepper et al., 2012; Wildschut et al., 2006), Study 1 in this paper is the first, to our knowledge, that explores the mediating role of nostalgia-induced positive emotion on cognitive (e.g., growth-oriented self-perceptions) and motivational (e.g., growth-oriented behavioral intentions) consequences of nostalgia.

Broader Implications

The current research has implications for broaden-and-build theory. For example, broaden-and-build theory posits that discrete positive emotions have in common the ability to build enduring and lasting psychological resources by broadening momentary thought–action repertoires (Fredrickson, 2001). However, the theory does not address in detail the means by which those momentary resources become lasting and enduring ones. The current research suggests that nostalgia might be an effective resource for doing this.

Nostalgia seems to capture and recycle many discrete positive emotions in one phenomenological experience: “[nostalgia] is infused with imputations of past beauty, pleasure, joy, satisfaction, goodness, happiness, love” (Davis, 1979, p. 14). In this way, it might be the case that nostalgia serves as a psychological resource that maintains and recycles, through memories of actual events, the distinct positive emotions that broaden and build thought–action possibilities. In other words, nostalgia can serve to broaden thought–action repertoires over time. This interpretation would be an answer to one critique of

broaden-and-build theory, namely, the issue of explaining how growth can occur under life circumstances that produce little to no positive affect. Nostalgia is a psychological experience that could allow a person, even in the direst circumstances, to re-live positive past events and therefore experience the broaden-and-build effects that come with them.

Importantly, we provide novel evidence that nostalgia's effect on positive self-regard can further promote psychological growth. While previous findings have highlighted the buffering function of nostalgia against threats to self-esteem (Vess et al., 2012), our research goes further to suggest that in providing a sense of self-esteem, nostalgia subsequently bolsters both perceptions of the self as interested in exploration and a desire to explore and engage in novel and self-expansive activities. Furthermore, when accounting for nostalgia's effect on positive self-regard, neither nostalgia-induced belongingness nor meaning in life emerged as mediators of nostalgia's effect on growth.

This finding is important as research begins to isolate connections between content and functions of nostalgia. For example, the majority of nostalgia research has focused on nostalgia's social or relational content; discussing nostalgia's effects on death anxiety (Routledge et al., 2008), meaning in life (Routledge et al., 2011), loneliness (Zhou et al., 2008), and physiological comfort (Zhou, Wildschut, Sedikides, Chen, & Vingerhoets, 2012) in terms of nostalgia's effect on social connectedness or relatedness. However, our research suggests that it is nostalgia's influence on a generally self-focused construct (e.g., positive self-regard) that best explains nostalgia's effect on growth.

Toward a dual motives function of nostalgia. Taken together with prior research showing nostalgia's ability to provide security (e.g., by reducing death-thoughts; Routledge et al., 2008), the current findings paint a picture of nostalgia's dynamic psychological function. In some situations nostalgia serves as a resource for reducing self-threats by conferring a sense of security while in other situations it serves to energize the pursuit of novelty, creativity, and broadened mastery. We view these seemingly divergent findings as representing two distinct but related functions of nostalgia motivated by the desire to "fit in" to a safe and secure worldview and the desire to expand and explore—to achieve a sense of uniqueness and authenticity. Attempts to integrate theories that describe these two distinct human motivations (i.e., security and growth) coalesce on the idea that a person is constantly balancing between the two (see Greenberg, Pyszczynski, & Solomon, 1995; Pyszczynski et al., 2003; Ryan & Deci, 2000). Following from this analysis is the idea that the extent to which a person displays behaviors related to security, compared to ones related to growth, depends, in part, on the salience of growth versus security needs prior to the observed behaviors.

We view nostalgia as operating under this general process. That is, we suggest that nostalgia has the ability to provide security in a threatening and uncertain world (e.g., Juhl & Routledge, 2012; Routledge et al., 2008; Wildschut et al., 2006, 2010) and to facilitate growth (Hepper et al., 2012; Iyer & Jetten, 2011), and that the individual deploys nostalgia to serve either of these two needs depending on which is activated prior to the nostalgia experience.

Based on this analysis, inducing the need for security (e.g., via a mortality salience prime) should elicit security-oriented outcomes from nostalgia, such as increased attachment security or reduced death ideations, but should *not* elicit growth-oriented outcomes such as perceptions of autonomy or behavioral intentions to explore. On the other hand, when growth needs are made salient (e.g., via an autonomy threat), nostalgia should promote these growth-oriented outcomes but should *not* promote those described as security-oriented. Preliminary evidence for this dual-motive model of nostalgia appears in one study (Routledge et al., 2008) in which nostalgia reduced the accessibility of death thoughts for participants (a security-oriented response) but only when mortality was made salient prior to the nostalgia task.

Nostalgia had no effect on death-thought accessibility when mortality was not made salient. Future research should attempt to isolate outcomes of nostalgia as a function of the motivation to protect the self or the motivation to expand the self.

Future Directions and Conclusion

Finally, one important step for future research will be to examine what elements of nostalgic reflection on the personal past give rise to increases in positive self-regard, which emerged as the mechanism explaining nostalgia's growth function. One answer may come from long-standing empirical support for the psychological power of self-determination for growth and well-being (Deci & Flaste, 1997; Deci & Ryan, 2000). It may be possible that nostalgia focuses the individual on relatively self-determined experiences. Such a focus on the self-determined aspects of one's past could be the key element of nostalgic reflection that activates a positive self-view, and thereby energizes the person to expand his or her understanding and experience of the world.

A related possibility is that nostalgia primes a sense of authenticity (Stephan et al., 2012), which may direct attention to those aspects of the self that are seen as truly valuable and meaningful to the individual. In doing so, nostalgia may reduce the extent to which one's self-worth is contingent on extrinsic sources of value—such as wealth or status—which typically lead to greater defensiveness and reduced overall well-being (see Williams, Schimmel, Hayes, & Martens, 2010). This possibility highlights the need to explore the effects of nostalgia on both extrinsic and intrinsic self-esteem.

Further research on these issues will likely provide practically useful insights into which varieties of nostalgic experience will be most likely to facilitate people's urge to realize their full potential.

Note

1. Due to significant correlations among the mediator variables, we were concerned that including all of the mediators in a simultaneous mediation model would lead to issues related to multicollinearity (e.g., inflated standard error estimates). Therefore, prior to testing the mediation models, we conducted two multiple regression analyses in which all of the mediators were included as predictors of growth-oriented self-perceptions and growth-oriented behavioral intentions. In doing so, we obtained tolerance statistics and variable inflation factors (VIF) for each predictor. The analyses revealed that tolerance and VIF for each predictor were within reasonable cutoffs (i.e., tolerance > 0.10, VIF < 10; see O'Brien, 2007), suggesting that multicollinearity was not an issue. Therefore, we proceeded with testing the simultaneous mediation models as planned.

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