

Who I Am Is Who I Was: Exploring the Identity-Maintenance Function of Nostalgia

By

Matthew W. Baldwin

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Chairperson Monica Biernat, Ph.D.

Mark Landau, Ph.D.

Ludwin Molina, Ph.D.

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The Thesis Committee for Matthew W. Baldwin
certifies that this is the approved version of the following thesis:

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Chairperson Monica Biernat, Ph.D.

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Abstract

Nostalgia is defined as a sentimental longing for the past and appears to be a frequently experienced, positive, and self-relevant emotion (Wildschut, Sedikides, Arndt, & Routledge, 2006). Across two studies, I examine the broader impacts nostalgia has on the self. Specifically, I find that nostalgia is related to perceptions of personal control, autonomy, and concern for externally defined standards of value. In study 1, the degree to which participants miss aspects of childhood predicts higher levels of personal control. In study 2, participants report feeling more personal control and autonomy as well as reduced concern with externally defined standards of value after writing about a nostalgic event compared to writing about an ordinary event. Furthermore, I provide evidence for a causal relationship between nostalgia, these identity-relevant variables, and meaning in life. These results suggest that nostalgia serves an identity-maintenance function.

Who I Am Is Who I Was: Exploring an Identity-Maintenance Function of Nostalgia

One can readily think of times when nostalgia was a central theme of conversation with friends or the substance of deep thought in solitude. Some even claim that nostalgia is an emotion that is felt by almost everyone (Boym, 2001). In support of this claim, a recent study provided evidence that a large majority of people may experience nostalgia at least twice a week (Wildschut et al., 2006). While nostalgia as a construct has received quite a bit of attention from sociologists (e.g., Pickering & Keightley, 2006) and historians (e.g., Le Goff, 1992) as well as marketing and consumer preference researchers (e.g., Schindler & Holbrook, 2003), only a small body of psychological research reports (and researchers for that matter) have attempted to explain the broader psychological significance of nostalgia. In the research reported here, I add to the small but growing body of nostalgia research. Specifically, I present two studies that shed light on the relationship between nostalgia and the self as well as discuss an identity-maintenance function of nostalgia.

Historically, nostalgia carried with it a twinge of negativity. In the late 17th century, nostalgia was a term used to explain the extreme homesickness experienced by Swiss mercenaries fighting for European monarchies. Introduced by Swiss physician Johannes Hofer, nostalgia was described as a neurological disease which included symptoms like fever, insomnia, and aimless wandering (Hofer, 1688/1934). Additionally, nostalgia was diagnosed as a psychiatric disorder marked by melancholy and depression (McCann, 1941; Rosen, 1975). Even the word itself suggests a negative connotation – *nostos* and *algos* are Greek words for homecoming and pain.

However, sociological work in the late 20th century found that college students used words like *warm* and *yearning* to describe nostalgia (Davis, 1979). More recently, research

confirms that nostalgia is mostly a positive experience. Based on the content of nostalgia narratives printed in a magazine, Wildschut and colleagues (2006) found that nostalgia is a self-relevant emotion which follows from engagement with a meaningful, experienced past. The majority of narratives was more positively than negatively valenced and followed a negative to positive narrative trajectory. That is, although some memories labeled as nostalgic may have had a twinge of negativity or bitter-sweetness, these aspects were redeemed or overshadowed by positive events. The nostalgia narratives were generally centered around interactions with significant others or momentous life events in which the self was the major actor.

But despite its positive content, nostalgia is often triggered by negative affect, and in particular, loneliness (Wildschut et al., 2006; Wildschut, Sedikides, Routledge, Arndt, & Cordaro, 2010; Zhou, Sedikides, Wildschut, Gao, 2008). In one study, participants were asked to list reasons why they may feel nostalgic. The majority of participants reported that feelings of loneliness are the main cause of nostalgia (Wildschut et al., 2006). Furthermore, experimental work suggests a causal link between loneliness and nostalgia. Participants were assigned to a high or low loneliness condition. Those in the high loneliness condition were given a version of the UCLA Loneliness Scale in which phrases were worded to elicit agreement (e.g., “I sometimes feel lonely.”) while participants in the low loneliness condition were given the same phrases only worded to elicit disagreement (e.g., “I always feel lonely.”). In addition, participants in the high loneliness condition were told their scores on this scale were above average on loneliness while participants in the low loneliness condition were told their scores were below average. Participants in the high loneliness condition reported feeling more nostalgic following this prime compared to participants in the low loneliness condition (Wildschut et al., 2006).

Furthermore, nostalgia seems to serve as a buffer against loneliness by increasing

perceptions of social support and social connectedness. In a study by Zhou and colleagues (2008), Chinese university students were randomly assigned to a high or low loneliness condition. Following the loneliness prime participants completed a measure of nostalgia proneness and perceived social support. Results revealed that while feelings of loneliness reduced perceptions of social support they also increased feelings of nostalgia. Nostalgia, in turn, increased perceptions of social support. Also, nostalgia is related to loneliness through perceptions of social connectedness. Wildschut and colleagues (2010) tested the hypothesis that low-avoidance individuals, who rely more on social bonds to regulate distress, would exhibit more nostalgia in response to the distress of low relational connectedness. Participants first completed a measure assessing the dimensions of avoidance and anxiety in close relationships as well as a measure of loneliness. Next, participants were asked to indicate how often they brought to mind nostalgic experiences. As predicted, nostalgia was positively related to deficiencies in relational connectedness for low-avoidance participants but not for high-avoidance participants. This finding supports the idea that nostalgia can serve to buffer the distress of loneliness by bolstering mental representations of social connectedness, but only for those who rely on social bonds to regulate distress.

In addition to loneliness as a trigger, research suggests that nostalgia serves an existential function. According to Terror Management Theory (TMT: Greenberg, Pyszczynski, & Solomon, 1986), people will utilize meaning making structures in order to cope with the inevitable threat of mortality. In one study, participants were given a mortality salience prime and then asked about meaning in life. Participants who were high in trait nostalgia reported more meaning in life following the MS prime compared to those low in trait nostalgia (Routledge et al., 2008). In another study, participants high in nostalgia proneness did not respond as negatively to an

identity threat following an MS prime compared to participants low in nostalgia proneness. In this same study, the researchers also found that participants high in nostalgia proneness reported feeling more state nostalgia following an MS prime compared to those low in nostalgia proneness (Juhl, Routledge, Arndt, Sedikides, Wildschut, 2010). While the TMT approach assumes that nostalgia serves as a meaning making structure in response to, or as a buffer against, mortality salience, no research has attempted to explain the relationship between nostalgia and meaning.

While it seems to be the case that nostalgia is an effective buffer against death thoughts and a means to bolster meaning as a consequence, it is unclear *how* nostalgia buffers these thoughts and effectively restores meaning. Furthermore, a broad mechanism for how nostalgia function to buffer loneliness and negative affect in general has yet to be proposed in the literature. Therefore, the purpose of these studies was two-fold: (1) to examine the identity function of nostalgia and (2) to examine whether nostalgia is successful in bolstering perceptions of meaning. I propose that the identity function of nostalgia acts through perceptions of uncertainty, control, and authenticity. While this is not an exhaustive list, these three constructs have been shown to be related to identity and have been discussed as having some relationship to nostalgia. I briefly describe these constructs below.

Nostalgia, Uncertainty, and Control

According to Aden (1995), “nostalgia indicates individuals’ desire to regain some control over their lives in an uncertain time” (p.21). How might nostalgia be related to uncertainty? As mentioned previously, nostalgia has shown to be a response to mortality salience. Some research suggests that mortality salience manipulations may not only implicate terror as TMT suggests, but may indirectly activate uncertainty concerns (Van den Bos, 2009; Yavus & Van den Bos,

2009). Therefore it seems plausible that this increase in nostalgia as a response to mortality salience can potentially be explained as a response to uncertainty. And if one conceptualized loneliness as relational uncertainty, this kind of uncertainty may explain the increase in nostalgia as a response to loneliness as well. Existential psychologist Ralph Harper (1966) suggests that nostalgia occurs in response to feelings of anonymity and lack of presence – or uncertainty about the self. Nostalgia then may allow one to recognize ontological certainties of past selves relevant for use in the present or future.

How might nostalgia work to buffer uncertainty? As the Aden quote suggests, perceptions of control may be related to nostalgia. Research on mental time travel provides some evidence for the relationship between recollections of the past and perceptions of control. Mental time travel (MTT; Suddendorf & Corballis, 1997) is a form of recall that allows one to re-experience situations previously encountered. Simple remembering of episodic memories is conceptually different in that during MTT one places the self in the experience (re-living it) while simple remembering is more disconnected with the experience. Research suggests that MTT may serve to increase foresight and planning as well as case-based planning (the reuse of past successful plans) in social interactions (see Suddendorf & Corballis, 1997), and vigilance in various domains (McCabe & Smith, 2001; Skowronski & Sedikides, 2007).

It is possible that nostalgia is a special kind of mental time travel that leads to perceptions of control over time, the social world, and the self. That is, the effects of MTT may include not only increased foresight and planning but perceptions of control over the rather uncontrollable present and future. Some research may already allude to this relationship. The relationship between nostalgia and increased perceptions of social support is especially strong for highly resilient individuals (Zhou et al., 2008). That is, participants who are highly resilient – those who

have learned to cope with distress in a variety of ways – are especially good at using nostalgia to buffer loneliness. However, because Zhou and his colleagues (2008) only examined the moderating effect of resiliency, it is unclear whether or not nostalgia increases, or is a consequence of, resiliency. Also, research on adaptation to life-threatening events suggests that a sense of personal control may serve as a resource that helps people manage day-to-day experiences as well as help people cope with stressful events (Taylor, 1983; Taylor & Brown, 1988). Therefore, the sense of control one gains through nostalgia may bolster meaning in life not only in the daily managing of experiences but also in response to stress.

Nostalgia as a Repository for the Authentic Self-Concept

Film director Woody Allen arose as a strong opponent of the colorization of film at the end of the 1980s. Allen proposed that black and white had aesthetic and expressive properties that were separate from film in color. Speaking about his film *Manhattan*, Allen stated that if the movie had been in color “all the nostalgic connotations would have vanished,” and that black and white carried with it a value of authenticity (in Grainge, 2002). Additionally, sociologist Janelle Wilson (2005) suggests that nostalgia may be a way to rediscover “a self that seemed more like the *true self*” (p. 26, emphasis added). Here we see that nostalgia may serve an identity function; a way to engage with former, more authentic conceptions of the self.

People may conceive of themselves as having both a true self and a more superficial self; an *intrinsic self-concept* and an *extrinsic self-concept* (see Landau et al., in press). The intrinsic self-concept – who people think they really are – is composed of one’s authentic attitudes, genuine interests, and ideas about one’s true talents. The extrinsic self-concept on the other hand represents the self which is presented to others; the outer “shell” which may be more influenced by social pressure. The relationship between the intrinsic self-concept, extrinsic self-concept, and

psychological functioning is somewhat ironic. Expressions of the intrinsic self are related to psychological well-being (Kasser & Ryan, 1996) but thoughts about expressing the this self may be coupled with anxiety and fear of being judged by others. Therefore, expressions of intrinsic aspects of the self are often in conflict with expressions of extrinsic aspects of the self. If one is acting discordantly with the intrinsic self-concept, psychological well-being may be hindered.

Given the importance of the intrinsic self for psychological functioning, research has begun to explore how the intrinsic self is represented. For example, people may represent the intrinsic self as something which is internal or hidden that is often incompatible with the self on the surface (Lakoff & Johnson, 1999). These hidden and internal aspects of the self may therefore be mentally represented as a physical entity. Metaphors for the intrinsic self as a physical entity are prominent in academic discussion (Rogers, 1961; Goffman, 1959; Jung, 1953; as cited in Landau, et al., in press) and are also being revealed through empirical data. For example, in one study, Swiss participants described the influence of the intrinsic self as something that is growing or expanding (e.g. "I am growing inside"; Moser, 2007). Also, there is evidence that viewing physical representations of expansion (e.g., a square getting larger) can lead to effects on self-perception related to the intrinsic self-concept but not the extrinsic self-concept (Landau et al., in press).

If the intrinsic self-concept is something that is represented as a physical entity, as this research suggests, it may be the case that nostalgic memories serve as a depository for these representations. Specifically, as Wilson (2005) suggested, nostalgic memories may serve as mental spaces where more authentic versions of the self are stored. Assuming that people have difficulty expressing their "true selves," nostalgia may be a way in which they can safely engage with such a representation. There is research to suggest that identity is represented as memory

(Kihlstrom, Beer, & Klein, 2002). Therefore, the intrinsic self may be represented by memories of past versions of the self which one perceives as more authentic. For example, people may feel that their moral values were better represented by a younger version of themselves – the “innocent child” perhaps. Engaging in nostalgia for childhood memories that are void of experiences which have tarnished one’s moral code may be a way to engage with whom one *really* is and not the extrinsic “shell” which is presented to others. Therefore, nostalgic pasts may be repositories for the intrinsic self-concept to be stored and used when one is questioning who he or she is. Engaging with the intrinsic self via nostalgia may restore and maintain identity which in turn restores and maintains perceptions of meaning.

Overview of the Present Research

Across two studies I aimed to shed light on the identity function of nostalgia. Through broad strokes, I first explored the relationships between nostalgia and the identity relevant variables described above by examining correlations among all of the variables of interest. In a second, more focused study, an experimental design was implemented that tested a more causal link between nostalgia and identity. Finally, I examined the implications of this nostalgia-identity link for perceptions of meaning in life.

Study 1

The first study was correlational in nature and sought to establish relationships among the key variables of interest: nostalgia, uncertainty, control, authenticity, and meaning in life. I predicted that the degree to which one feels nostalgic would be negatively related to uncertainty and positively related to perceptions of control, authenticity, and meaning in life.

Method

Participants. Two hundred and fifty participants (80 male, 165 female, 2 indicated

“other”, 3 unknown) completed an online survey for course credit, pay, or as a volunteer (81% for pay). Ages ranged from 18 to 81 years old with a majority (52%) of the sample being age 30 or younger. Eighty-four percent of the sample was comprised of White participants, 7% were Black, 4% were Hispanic or Latino/a, 2 % were Asian or Asian American, and 1% were American Indian or Alaska Native. Two participants did not indicate race.

The sample was diverse on several other demographic dimensions. A near majority of the sample had never been married (42%) while 36% were married, 7% were divorced, and the remaining 2% were widowed or separated. One participant did not indicate marital status. Half of the sample indicated that they were employed while 28% were unemployed, 5% were retired, and 27% were students (note that these were not mutually exclusive categories). The sample was slightly more liberal with 44% falling between *lean liberal* and *very liberal*. Twenty-nine percent fell between *very conservative* and *lean conservative* while the remaining 27% labeled themselves as *moderate*. Finally, most of the sample (78%) was religious while the remaining 22% were agnostic or atheist.

Materials and procedure. Participants were given a link to an online survey distributed through a psychology department recruitment system (with introductory psychology students completing research for credit) or through Amazon Mturk, which is a program developed by Amazon in which tasks are outsourced to, and completed by, users for payment. Introductory psychology students were able to access a recruitment website (www.sona-systems.com) which displays a list of open research studies across the department. Students chose to participate in this study by merely clicking on a web link. Participants who completed the survey through Amazon Mturk (who are called “workers”) again chose to participate by selecting the study from a list of available tasks posted on Mturk. Workers are individuals who have an account with Amazon.com

and choose to participate in a variety of tasks posted at the site. They are “self-employed” (that is they are not hired or recruited by Amazon.com) and could potentially be any age above 18 years and located anywhere in the world. This particular survey was only visible to workers on Mturk who were from the United States and who had high completion record for other tasks on Mturk. Finally, all participants were informed that the survey consisted of a series of questions about their personality and values and were asked to provide consent before beginning the survey.

Nostalgia. First participants completed a block of measures which consisted of two nostalgia scales. The Batcho Nostalgia Inventory (NI; Batcho 1995) consisted of a 9-point scale (1 = *not at all*, 9 = *very much*) in which participants rated the extent to which they missed 19 aspects of their past ($\alpha = .88$). The scale included items such as “the way society was,” “having someone to depend on,” “school,” and “toys.” Although there is evidence that the NI is valid (Batcho 1995, 1998) merely missing something from the past does not predicate the existence of nostalgia. Furthermore, the NI may not capture the extent to which one is consistently prone to nostalgia (i.e., trait-level nostalgia). Therefore we also administered the 5-item Southampton Nostalgia Scale (SNS; Routledge et al., 2008) to supplement the NI. Items on the SNS assessed both frequency (e.g., “How often do you feel nostalgic?”) and importance of nostalgia (e.g., “How important is it for you to bring to mind nostalgic experiences?”). The SNS was moderately correlated with the NI in previous studies (see Routledge et al., 2008) and was highly reliable in our sample ($\alpha = .93$). The full text of these and other instruments appears in Appendix A.

Self-measures. In the second block, participants completed measures aimed to measure control, authenticity, and uncertainty (scales were counterbalanced). The personal and interpersonal subscales of the Spheres of Control Scale (Paulhus, 1983) were used to measure personal and interpersonal control. After removing two problematic items¹, the personal control

scale ($\alpha = .83$) consisted of 8-items in which participants rated the accuracy of a set of statements regarding perceptions of control over one's own life (e.g., "Almost anything is possible for me if I really want it.") using a 7-point scale (1 = *totally inaccurate*, 7 = *totally accurate*). The interpersonal control scale ($\alpha = .76$) used the same rating scale as did the personal control scale but included items measuring perceptions of control in one's relationships (e.g., "I have no trouble making and keeping friends.").

Previous research has shown that two outcomes associated with the enhanced expression of the intrinsic or authentic self-concept are a greater sense of self-actualization and reduced concern with extrinsically defined standards of value (Kasser & Ryan, 1996; Williams, Schimel, Hayes, & Martens, 2009). Therefore to measure perceptions of authenticity, participants completed the Extrinsic Contingency Focus Scale (ECS; Williams et al., 2009) and the Self-Actualization Index (SAI; Jones & Crandall, 1986). Participants responded to the ECS (e.g., "I work hard at things because of the social approval it provides.") using a 5-point scale (1 = *strongly disagree*, 5 = *strongly agree*) and the SAI (e.g., "It is better to be yourself than to be popular.") using a 6-point scale (1 = *strongly disagree*, 6 = *strongly agree*). Reliability for the SAI was fair ($\alpha = .75$) after removal of two problematic items. The ECS proved to be more reliable after removal of two items ($\alpha = .85$). To create an index of authenticity, ECS responses (reverse scored) and SAI responses were standardized and averaged such that positive standardized values indicated authenticity scores above the sample mean.

Uncertainty ($\alpha = .96$) was assessed using the 19-item Felt Uncertainty Scale (McGregor, Zanna, Holmes, & Spencer, 2001). According to these researchers, items were collected from various fields of study related to personal uncertainty such as dissonance, ambivalence, and contradictory self-guides. Participants responded using a 5-point scale (1 = *not at all*, 5 =

extremely) to indicate how their feelings matched each of 19 words or statements (e.g., “mixed,” “uneasy,” “unsure of self or goals”).

Meaning in life. Finally, in block three, participants completed a meaning in life scale (Steger, Frazier, Oishi, & Kaler, 2006) comprised of two 5-item subscales. Participants used a 7-point scale (1 = *absolutely untrue*, 7 = *absolutely true*) to respond to items measuring presence of meaning (e.g., “I have discovered my life’s meaning”) and search for meaning (e.g., “I am always searching for my life’s purpose”). Both the presence of meaning ($\alpha = .92$) and search for meaning ($\alpha = .89$) subscales were reliable.

Results

Correlations. Correlations among all of the indexes are reported in Table 1. The two nostalgia measures—the SNS (Southampton Nostalgia Scale) and NI (Batcho Nostalgia Inventory)—were only moderately positively correlated ($r = .37, p < .001$), suggesting that these may be tapping different aspects of nostalgia. How did nostalgia relate to the other measured constructs? As predicted, scores on the NI were positively correlated with personal control ($r = .15, p < .05$). However, the NI was also positively correlated with *search* for meaning ($r = .14, p = .02$) and extrinsic contingency focus ($r = .20, p < .01$) – two unexpected correlations. Furthermore, the NI was negatively correlated with the standardized authenticity index ($r = -.14, p < .05$). The SNS was also unexpectedly positively correlated with search for meaning ($r = .13, p < .01$) and uncertainty ($r = .13, p = .05$). Finally, while I predicted that nostalgia would be positively related to *presence* of meaning, this correlation was not found for either nostalgia scale.

Because the NI was correlated with personal control in the predicted direction, and personal control is a key variable in the proposed identity-maintenance model, I further

examined the correlations between personal control and the other identity relevant measures. Table 1 indicates that personal control was negatively correlated with uncertainty ($r = -.33, p < .01$), search for meaning ($r = -.20, p < .01$), and extrinsic contingency focus ($r = -.30, p < .01$). Additionally, personal control was positively correlated with presence of meaning ($r = .45, p < .01$), interpersonal control ($r = .61, p < .01$), self-actualization ($r = .45, p < .01$), and the authenticity index ($r = .42, p < .01$).

Mediation. One goal of this study was to examine the relationship between nostalgia, identity, and meaning in life. Because the NI was positively correlated with personal control (the only hypothesized outcome), and because personal control was highly correlated with presence of meaning in life, mediation analysis was carried out according to procedures described by Preacher and Hayes (2008). Specifically, I tested the effect of nostalgia on presence of meaning through personal control². I specified 5,000 boot-strap samples to obtain standard errors and 95% confidence intervals of the indirect effect.

As seen in Figure 1, nostalgia was positively related to perceptions of personal control, $\beta = .09, SE = .40$, and personal control predicted increased meaning in life, $\beta = .76, SE = .10$. Finally, although the direct effect of nostalgia on meaning in life was not significant, the confidence interval for the indirect effect of nostalgia on presence of meaning, through personal control did not include zero, $CI_{.95} = .01, .52$, which signifies a significant indirect effect.

Discussion

The primary interest of this study was to examine the relationships among nostalgia and several identity-relevant variables that may begin to shed light on an identity-maintenance function of nostalgia. I utilized a correlational design to explore the relationships among nostalgia, as measured via the Batcho Inventory (NI) and the Southampton Nostalgia Scale

(SNS), perceptions of uncertainty, control (personal and interpersonal), authenticity (low extrinsic contingency focus; high self-actualization), and presence of and search for meaning in life. The two measures of nostalgia were only modestly correlated, and only the NI provided any support for the key hypothesized relationships. The NI was correlated, as predicted, with personal control, but it also unexpectedly predicted lower levels of authenticity and search for meaning, and did not predict presence of meaning in life. The SNS on the other hand did not predict personal control, but again unexpectedly, was related to increased uncertainty and search for meaning in life.

These unexpected correlations are perplexing. One explanation for these findings, at least for the NI, can be found in the wording of the NI scale instructions. In asking participants to rate aspects of the past that they *miss*, the NI may be inadvertently priming aspects of nostalgia related to loss. In responding to the NI, participants may be considering aspects of their past that are meaningful and proxies for the true self, but when asked to consider how they miss those things, the consequence is detrimental to identity. More generally, nostalgia may be priming aspects of loss regardless of the scale, which may explain the unexpected correlations between the SNS, uncertainty, and search for meaning.

Another possibility is that these correlations are describing those who are struggling with identity-maintenance and who are attempting to use nostalgia as a means to regain some identity security. Recall that scores on the SNS were positively correlated with search for meaning and uncertainty, and that scores on the NI were positively correlated with search for meaning and extrinsic contingency focus. It appears that as participants became more concerned with the search for meaning, experienced more uncertainty, and became more concerned with defining value by sources outside the self (potential characteristics of those struggling to secure identity),

they tended to report more nostalgia.

Contradictory to these findings, I found that nostalgia (measured by the NI) was related to increases in perceptions of personal control which functioned to increase perceptions of meaning in life. Why does the NI, but not the SNS predict increases in personal control and subsequent meaning in life? This may be due to the fact that one scale measures a content-free dispositional nostalgia (nostalgia proneness; SNS), while the other may tap a more content-focused state nostalgia (NI). The nostalgia proneness scale does not tap into the affective component of nostalgia quite like the Batcho inventory does. That is, one may report engaging in nostalgia very frequently, but the degree to which one feels the emotion is not measured by the SNS. It may be possible that one could engage in nostalgia with high frequency but low intensity. Following from this assessment, it may be possible that the NI, compared to the SNS, has more predictive strength in terms of identity-maintenance *outcomes*. While the NI surely can describe those who are struggling with identity-maintenance (as seen by the positive correlations with search for meaning and extrinsic contingency focus), the affective component of the NI adds a level of information over the SNS. In this case, the more *intensely* (rather than the frequency) one feels nostalgic about aspects of the past, the more personal control, and meaning in life one perceives.

However, taking this view also adds a level of ambivalence to the construct. How can nostalgia be predicting positive outcomes on identity and meaning in life while simultaneously predicting negative ones? This question illuminates the divergent and conflicting findings within this study. On the one hand, it seems like nostalgia predicted perceptions of control which had *positive* downstream effects on identity. On the other hand, nostalgia (measured by both the SNS and the NI) also predicted outcomes that may have *negative* consequences for identity.

However, a quick change of perspective could provide a story that nostalgia is a

consequence of identity struggle. Unfortunately, the correlational nature of this study is a major limitation. For one, am I limited in my discussion of these correlations (expected and unexpected) as well as any fruitful discussion of a causal model between nostalgia, identity-maintenance, and meaning in life. That is, I cannot rule out the possibility that perceptions of meaning promote feelings of personal control, which in turn increase nostalgia. Perhaps the use of nostalgia as a tool for identity-maintenance is more common or better practiced among participants who perceive high personal control.

Furthermore, it is unclear whether nostalgia for the past is essential for identity-maintenance or if *any* engagement with past is sufficient for similar effects. I address these limitations in a second study. Specifically, I designed a study which aimed to examine the relationship between nostalgia and identity-maintenance by manipulating feelings of nostalgia before administration of the identity-relevant measures.

Study 2

The first goal of study 2 was to replicate the positive relationship between nostalgia and personal control documented in study 1, by manipulating nostalgia and measuring perceptions of control. Secondly, study 2 aimed to test the causal effect of nostalgia on the identity-maintenance variables of interest (the proposed mediating variables) and meaning in life (the proposed outcome). Study 2 also aimed to examine the unexpected correlations found in study 1. Is it the case that nostalgia has both negative *and* positive consequences on identity? Or do the unexpected correlations merely describe those who are using nostalgia to bolster a positive sense of self, and will therefore disappear or reverse when nostalgia is manipulated?

Method

Participants and design. Fifty introductory psychology students (40% female), whose

native language was English, completed the study for course credit. The sample was predominately white (92%) and had a median age of 19. The study was a 2-way, between-subjects design in which participants were randomly assigned to an ordinary event condition or a nostalgic event condition.

Materials and procedure. As in Study 1, participants were given a link to an online survey created using Qualtrics Survey Software. Participants obtained the link through the Sona Systems recruitment website and, after clicking on the link, were informed that they would write about a memory and complete some personality measures. The survey program randomly assigned participants to think and write about either a nostalgic or ordinary event, a manipulation used in previous research (Wildschut et al, 2006; Routledge et al, 2008). In the ordinary event condition participants were asked:

Please think of an ordinary event in your life that you personally experienced in the last week. Please bring this ordinary event to mind and think it through. Take a few minutes to think about this ordinary event.

After thinking about the event participants were asked to write about the event using only factual details, avoiding emotionally expressive words. In the nostalgic event condition participants were asked:

Please think of a past event that you have personally experienced and that has personal meaning for you. This should be an event that you think about in a *nostalgic way*.

Specifically, please try to think of an important part of the past (e.g., event or episode) that makes you feel *most nostalgic*. Please bring this nostalgic event to mind and think it through. Take a few minutes to think about this nostalgic event.

Again, after thinking about the event participants were asked to write about the event, only in the

nostalgic event condition participants were asked to write in as much vivid detail as possible.

Following the manipulation all participants received a manipulation check consisting of two items using a 5-point scale (1 = *strongly disagree*, 5 = *strongly agree*). The items were “right now, I am feeling quite nostalgic,” and “right now, I’m having nostalgic feelings.” Finally, participants completed a set of self-related measures identical to those used in study 1 and were asked to read a debriefing statement before closing their internet browser.

Results

First, I assessed the strength of the manipulation by creating an average nostalgia score based on responses to the two manipulation check items ($\alpha > .80$). An independent samples t-test revealed that participants in the nostalgic event condition ($M = 3.66, SD = .90$) reported feeling more nostalgic than participants in the ordinary event condition ($M = 2.72, SD = 1.03$), $t(48) = -3.44, p < .01, d = .97$.

While I was primarily interested replicating the positive relationship between nostalgia and personal control, I also wanted to explore the relationships between nostalgia and the other identity variables of interest. Therefore I performed an independent samples t-test to compare each dependent variable of interest in the nostalgic event condition and the ordinary event condition (see Table 2 for means and standard deviations). First, event condition had a significant effect on personal control, $t(48) = -2.17, p < .05, d = .52$. As predicted, participants reported more personal control after writing about a nostalgic event compared to writing about an ordinary event. There was also a marginal effect of event condition on interpersonal control, $t(48) = -1.87, p = .07, d = .53$, such that participants reported more interpersonal control after writing about a nostalgic event compared to writing about an ordinary event.

Furthermore, consistent with my original prediction, there was partial evidence to suggest

that nostalgia bolsters authenticity. Participants reported less concern with extrinsically defined standards of value after writing about a nostalgic event compared to writing about an ordinary event, $t(48) = 2.64, p = .01, d = .75$. And while the nostalgia manipulation had no effect on overall self-actualization, participants in the nostalgia condition reported higher scores on the autonomy sub-scale of the self-actualization index, $t(48) = -2.30, p < .05, d = .65$. Finally, scores on the standardized authenticity index were higher in the nostalgic event condition compared to the ordinary event condition, $t(48) = -2.12, p < .05, d = .60$.

As was the case in Study 1, I did not find a direct relationship between nostalgia and the presence of meaning in life, $t = -1.28$. Furthermore, I did not find an effect of event condition on the search for meaning in life, $t = 1.51$. While participants did report slightly less concern with the search for meaning and perceived slightly more presence of meaning in life after writing about a nostalgic event compared to an ordinary event, these differences were not significant.

Mediation. Because there was a direct effect of the event manipulation on personal control, extrinsic contingency focus, and autonomy, I examined the extent to which indirect effects of these three variables might illuminate the relationship between nostalgia and presence of meaning in life. I performed a multiple-mediator analysis using procedures described by Preacher and Hayes (2008). Specifically, I tested the effect of the event condition on presence of meaning through personal control, extrinsic contingency focus, and autonomy. I specified 5,000 boot-strap samples to obtain standard errors and 95% confidence intervals of the indirect effects.

Figure 2 describes the multiple-mediator model and Table 3 reports the significance tests of the mediation effects. As seen in Figure 2, the effects of nostalgia on personal control, extrinsic contingency focus, and autonomy were still present in the multivariate model. Furthermore, personal control and autonomy were related to increased meaning in life and

extrinsic contingency focus was related to decreased meaning in life. Finally, there was an indirect effect of nostalgia on presence of meaning through both personal control and extrinsic contingency focus, but not autonomy (Table 3). Specifically, writing about nostalgia bolstered perceptions of personal control and decreased concern with extrinsically defined standards of value, which in turn increased perceptions of meaning in life.

Discussion

Study 2 provides evidence that engaging in nostalgia can bolster perceptions of personal control and authenticity. Specifically, after writing about a nostalgic event, participants reported feeling more personal control, were less concerned with external standards of value, and reported more autonomy. While I did not find a *direct* relationship between nostalgia and the presence of meaning in life I did find a causal relationship between nostalgia, personal control, extrinsic contingency focus, and presence of meaning. The sense of control one felt after engaging in nostalgia, along with reduced concern with externally defined standards of value, led to increased meaning in life.

General Discussion

Toward an identity-maintenance function of nostalgia

Across two studies I provide evidence that nostalgia is related to perceptions of control. In Study 1, I found that the extent to which one misses several aspects of childhood was positively related to perceptions of personal control (however not interpersonal control). In Study 2, I found that participants who wrote about a nostalgic event reported more personal control compared to participants who wrote about an ordinary event.

How are perceptions of control related to identity? Personality and identity theories have often converged on describing individuals' basic need for agency and communion (Bakan, 1966).

For example, two of Erikson's (1950) stages of psychosocial development describe the need for autonomy and the need for basic trust (of others). McAdams (1985) writes that individuals are motivated by the need for power and the need for intimacy. Expanding on this idea, self-determination theory (SDT; Deci & Ryan, 2000) proposes that there are three fundamental and universal needs for successful construction and integration of identity – competence, relatedness, and autonomy. How does one satisfy these needs? While years of research have sought to answer this question, McAdams (1993) suggests that the construction of one's identity takes place through the construction and reconstruction of one's life story. I argue that nostalgia is part of this process. Nostalgia, by definition, requires an engagement of some meaningful part of one's past and it often arises from an idealization of this past. Therefore, I propose that nostalgia is a marker of engagement with those parts of one's life story that have been reconstructed, or idealized, to have benefits for one's identity – specifically, for the identity integration needs proposed by Deci and Ryan (2000). The current findings speak to the competence and autonomy components of SDT.

Competence, according to Deci and Ryan (2000) is the “propensity to have an effect on the environment as well as to attain valued outcomes within it.” There seems to be some overlap between competence and personal control. For example, one item from the personal control scale reads, “My major accomplishments are entirely due to my hard work and ability.” Agreement with this item means that one not only believes hard work and ability can produce outcomes but that these outcomes will be positive (accomplishments). The data I present here suggests then that nostalgia provides one with a sense of competence through bolstering perceptions of personal control.

Autonomy is the sense that one is independent and free, and research suggests that autonomy fosters intrinsic motivation (Sheldon & Kasser, 1995). Therefore, two findings from the current research suggest that nostalgia also bolsters perceptions of autonomy. First, writing about nostalgia in Study 2 increased scores on the autonomy sub-scale of the self-actualization index. Secondly, writing about nostalgia decreased concern with externally defined standards of value. While these outcomes were originally framed as being related to authenticity, due to the lack of a corresponding increase in overall self-actualization, it is difficult to conclude that nostalgia is increasing authenticity. Rather, these specific aspects of authenticity, namely autonomy and extrinsic contingency focus, seem to be more related to the construct of autonomy, as described by SDT.

To the extent that nostalgia serves to meet (or at least bring one closer to) the goal of successful identity formation, I propose that nostalgia is a motivated emotion that serves to buffer threats to identity, thereby maintaining one's positive sense of self. While the two studies I present here do not directly threaten identity, evidence for this function of nostalgia has already been established, although the researchers did not frame it as such. Nostalgia is a response to loneliness and can buffer the negative consequences of loneliness by bolstering perceptions of social connectedness and social support (Wildschut et al., 2010; Zhou, Sedikides, Wildschut, Gao, 2008). Loneliness could be considered a threat to the SDT proposed need of relatedness – loneliness is an indicator that one is not relating to others or is having trouble belonging to groups. Therefore, loneliness is an identity threat (under this framework) and nostalgia is a motivated response to this threat that serves to maintain one's identity, by restoring perceptions of relatedness (i.e., increasing perceptions of social support and connectedness).

Furthermore, nostalgia is a response to mortality salience. Again, mortality is a threat to all three aspects of self-growth and expansion proposed by SDT – death places a constraint on the ability to grow or expand in general. As research demonstrates, nostalgia is a response to mortality salience which buffers the threat of death by reducing death thought accessibility, thereby maintaining identity.

Finally, some of the findings from Study 1 suggest the operation of identity-maintenance processes. For example, the positive correlation between scores on the NI and extrinsic contingency focus suggests that those who derive value from outside of the self are seeking to break free from this constraint by engaging in nostalgia. Furthermore, scores on the SNS were positively correlated with uncertainty. There is consistent agreement that uncertainty is an aversive motivational state that often leads to the need for uncertainty reduction (Hogg, 2009). And some models propose that uncertainty can be reduced through social categorization (Hogg, 2000). Recall that nostalgia is related to various aspects of social bonding (Wildschut et al., 2006; Wildschut et al., 2010, Zhou, Sedikides, Wildschut, Gao, 2008). It may be the case that reminders of social bonding are also reminders of meaningful social categories one belongs to. And some preliminary evidence suggests that nostalgia is related to increases in collective self-esteem (Baldwin, Sakaluk, & Longabach, 2011). Finally, Wilson (2005) suggests that some kinds of nostalgia has elements of collective memory, can be a tool for class or group purposes, hints at shared past with like-minded others, and serves as a sanctuary for group identification. The data in this paper, along with other findings and discussion in the literature, suggest that engaging in nostalgia that serves as a facilitator of social categorization may subsequently reduce uncertainty and thereby protect or maintain identity.

Consequence of identity-maintenance

Self-determination theory posits that one consequence of meeting the three fundamental needs of competence, relatedness, and autonomy is increased meaning in life (Weinstein, Ryan, & Deci, in press). While I did not find a direct relationship between nostalgia and presence of meaning, I provide evidence for a causal relationship between nostalgia and presence of meaning in life, through perceptions of control and extrinsic contingency focus. That is, while the identity-maintenance function of nostalgia can serve to buffer threats to identity, it can also aid in self-expansion and increased meaning in life when acting through these identity-maintenance structures.

It is important to note however that the lack of a direct effect suggests that, while nostalgia is a meaning-making structure in one sense, it may be acting against perceptions of meaning in another. The lack of a direct effect in both Study 1 and Study 2 may mean that two opposing processes are in play. Perhaps some have learned to successfully use nostalgia for good, that is, have learned to *retrieve* positive aspects of the past for use in the present, in a way that has positive consequences for identity. On the other hand, some may use nostalgia to *retreat* from the present that is threatening, constraining, uncertain, or overwhelming. This process leads to a contrast between a lacking present and a better past, which in turn reduces meaning in life.

Limitations and Future Directions

While I propose that these effects are unique to nostalgia, it is possible that engagement with any meaningful past experience is sufficient to produce the same outcomes that I find here. As I mentioned previously, McAdams (1993) proposes that identity is formed through the narration of one's life story. Perhaps the mere story-telling process is bolstering one's sense of self, whether or not that story is nostalgic, redemptive, tragic, negative, or positive. Along the same lines, it is unclear from these studies whether the effects of nostalgia on identity and

meaning are unique to nostalgia or merely a function of mental time travel. It may be possible that imagining the future provides one with the sense of control and autonomy in the same way nostalgia does. And it may be the case that imagining a future that is positive in affect, redemptive, and self-relevant could provide one with a sense of meaning, in the same way nostalgia does. Experimental conditions that prime engagement with meaningful, but non-nostalgic pasts, as well as engagement with imagined futures, would be useful comparison groups in future studies.

Although I can speculate about the unexpected correlations of Study 1, it is still unclear what was causing the negative correlations between nostalgia and identity relevant outcomes. Unfortunately, the correlational nature of Study 1 cannot provide an answer to this question and the directional nature of Study 2 (i.e., nostalgia predicting identity variables) does not provide an adequate test of all of the possibilities. Future studies should utilize identity threat manipulations in order to measure nostalgia as a response to threat.

Finally, a few methodological and technical notes can be made concerning these two studies. First, there were complicated age effects in both studies that were not discussed in this report. It seemed as though the extent to which nostalgia had positive or negative consequences on identity depended on age. In general, older adults did not report the same benefits of nostalgia as did the younger adults in the sample. Because age was hindering interpretability, I chose to limit the sample in Study 2 to only those participants who completed the study for introductory psychology course credit. This decision was made on the grounds that (1) age would be constant across the sample and (2) that most college students of similar age would likely be struggling with identity in similar ways, which allow for some control when exploring the identity-maintenance function of nostalgia. However, further analysis will explore the developmental

aspect of nostalgia and future studies could implement a longitudinal or cohort design in order to better understand the relationship between nostalgia and aging.

Second, from a statistical point of view, advanced data analysis techniques could further illuminate these findings. For example, structural equation modeling (SEM) would allow for testing of complex models linking nostalgia, identity, and meaning in life. These studies only report simple or multiple mediation analyses which do not adequately account for all of the intricacies that may exist between nostalgia, identity, and meaning. Furthermore, factor analysis techniques may be used to separate items on the Batcho inventory into different nostalgia-types, which may have different outcomes on different aspects of identity. Also, there was little evidence to show that nostalgia was related to authenticity. This non-finding is potentially due to the poor quality of the “authenticity” measures (i.e., extrinsic contingency focus, self-actualization). Future studies will use more robust and reliable measures of authenticity to further examine the relationship between nostalgia and authenticity.

Finally, I end with words from two sociologists who claim that nostalgia “covers a range of ways of orienting to and engaging with the past” (Pickering & Keightly, 2006; p. 926). I strongly support this notion and propose that nostalgia research has only cracked the tip of a very large iceberg. While the definition of nostalgia proposed by Wildschut et al., (2006) is a good starting point, future nostalgia research must break from this mold. In doing so, a broad theory of nostalgia, diverse and full of nuance, will start to take shape as we move to understand why we so often decide who we are, by who we were.

References

- Aden, R. C. (1995). Nostalgic Communication as Temporal Escape *When It Was A Game's* Reconstruction of a Baseball/Work Community." *Western Journal of Communication*, 59, 20-38.
- Baldwin, M., Sakaluk, J., Longabach, T. (2011). [Exploring collective nostalgia]. Unpublished raw data.
- Batcho, K. I. (1995). Nostalgia: A psychological perspective. *Perceptual and Motor Skills*, 80, 131-143.
- Boym, S. (2001). *The future of nostalgia*. New York, NY: Basic Books.
- Davis, F. (1979). *Yearning for yesterday: A sociology of nostalgia*. New York: Free Press.
- Deci, E.L., & Ryan, R.M. (2000). The "what" and "why" of goal pursuits: Human needs and the self-determination of behavior. *Psychological Inquiry*, 11, 227-268.
- Erikson, E.H. (1950). *Childhood and Society*. New York: Norton.
- Goffman, E. (1959). *The presentation of self in everyday life*. Garden City, NY: Doubleday-Anchor.
- Grainge, P. (2002). *Monochrome Memories: Nostalgia and Style in Retro America*. Westport, CT: Praeger.
- Greenberg, J., Pyszczynski, T., & Solomon, S. (1986). The causes and consequences of a need for self-esteem: a terror management theory. In R. F. Baumeister (Ed.), *Public self and private self* (pp. 189-212). New York: Springer-Verlag.
- Harper, R. (1966). *Nostalgia: An Existential Exploration of Longing and Fulfillment in the Modern Age*. Cleveland, OH: The Press of Western Reserve University.
- Hofer, J. (1934). Medical dissertation on nostalgia (C.K. Anspach, Trans.), *Bulletin of the History of Medicine*, 2, 376-391. (Original work published 1688).

- Hogg, M. A. (2000). Subjective uncertainty reduction through self-categorization: A motivational theory of social identity processes. *European Review of Social Psychology, 11*, 223–255.
- Hogg, M.A. (2009). Managing self-uncertainty through group identification. *Psychological Inquiry, 20*, 221-224.
- Jones, A., & Crandall, R. (1986). Validation of a short index of self-actualization. *Personality and Social Psychology Bulletin, 12*, 63-73.
- Juhl, J., Routledge, C., Arndt, J., Sedikides, C., & Wildschut, T. (2010). Fighting the future with the past: Nostalgia buffers existential threat. *Journal of Research in Personality, 44*, 309-314.
- Jung, C. G. (1953). *The collected works of C. G. Jung* (H. Read, M. Fordham, & G. Adler, Eds.). New York: Pantheon Books.
- Kasser, T., & Ryan, R. M. (1996). Further examining the American dream: Differential correlates of intrinsic and extrinsic goals. *Personality and Social Psychology Bulletin, 22*, 280-287.
- Kihlstrom, J.F., Beer, J.S., & Klein, S.B. (2002). Self and identity as memory. In M.R. Leary & J. Tangney (Eds.), *Handbook of self and identity* (pp. 68-90). New York: Guilford Press.
- Lakoff, G., & Johnson, M. (1980). *Metaphors we live by*. Chicago: University of Chicago Press.
- Landau, M. J., Vess, M., Arndt, J., Rothschild, Z., Sullivan, D., & Atchley, R. A. (in press). Embodied metaphor and the “true” self: Priming entity expansion and protection influences intrinsic self-expressions in self-perceptions and interpersonal behavior. *Journal of Experimental Social Psychology*.
- Le Goff, J. (1992). *History and Memory*. New York: Columbia University Press.
- McAdams, D. P. (1985). *Power, intimacy, and the life story: Personological inquiries*

- into identity*. New York: Guilford.
- McAdams, D. P., Josselson, R., & Lieblich, A. (Eds.). (1993). *The stories we live by*. Guilford Press.
- McCabe, K.A. and Smith, V.L. (2001). Goodwill accounting and the process of exchange. In *Bounded Rationality: The Adaptive Toolbox* (Gigerenzer, G. and Selten, R., eds), pp. 319–340, The MIT Press
- McCann, W. H. (1941). Nostalgia: A review of the literature. *Psychological Bulletin*, 38, 165–182.
- Paulhus, D. (1983). Sphere-specific measures of perceived control. *Journal of Personality and Social Psychology*, 44, 1253-1265.
- Pickering, M. & Keightley, E. (2006). The Modalities of Nostalgia. *Current Sociology*, 54, 919-941.
- Preacher, K. J., & Hayes, A. F. (2008). Asymptotic and resampling strategies for assessing and comparing indirect effects in multiple mediator models. *Behavior Research Methods*, 40, 879-891.
- Rogers, C. R. (1961). *On becoming a person*. New York: Houghton Mifflin.
- Rosen, G. (1975). Nostalgia: A “forgotten” psychological disorder. *Psychological Medicine*, 5, 340–354.
- Routledge, C., Arndt, J., Sedikides, C., & Wildschut, T. (2008). A blast from the past: The terror management function of nostalgia. *Journal of Experimental Social Psychology*, 44, 132-140.
- Schindler, R. M., & Holbrook, M. B. (2003). Nostalgia for early experience as a determinant of consumer preferences. *Psychology & Marketing*, 20, 275-302.

- Sheldon, K.M., & Kasser, T. (1995). Coherence and congruence: Two aspects of personality integration. *Journal of Personality and Social Psychology*, *68*, 531-543.
- Steger, M. F., Frazier, P., Oishi, S., & Kaler, M. (2006). The Meaning in Life Questionnaire: Assessing the presence of and search for meaning in life. *Journal of Counseling Psychology*, *53*, 80–93.
- Skowronski, J. J., & Sedikides, C. (2007). Temporal knowledge and autobiographical memory: An evolutionary perspective. In R. I. M. Dunbar & L. Barrett (Eds.), *Oxford handbook of evolutionary psychology* (pp. 505-517). Oxford, UK: Oxford University Press.
- Suddendorf, T. & Corballis, M. C. (1997). Mental time travel and the evolution of the human mind. *Genetic Social and General Psychology Monographs*, *123*, 133-167.
- Taylor, S.E. (1983). Adjustment to threatening events: A theory of cognitive adaptation. *American Psychologist*, *38*, 1161-1173.
- Taylor, S.E., & Brown, J. (1988). Illusion and well-being: A social psychological perspective on mental health. *Psychological Bulletin*, *103*, 193-210.
- Van den Bos, K. (2009). Making sense of life: The existential self trying to deal with personal uncertainty. *Psychological Inquiry*, *20*, 197-217.
- Wildschut, T., Sedikides, C., Arndt, J., & Routledge, C. (2006). Nostalgia: Content, triggers, functions. *Journal of Personality and Social Psychology*, *91*, 975-993.
- Weinstein, N., Ryan, R. M., & Deci, E. L. (in press). A self-determination theory perspective on the process and content of life meaning. In P. T. P. Wong & P. S. Fry (Eds.), *The Human Quest for Meaning Vol 2*. New York: Guilford.
- Wildschut, T., Sedikides, C., Routledge, C., Arndt, J., & Cordaro, F. (2010). Nostalgia as a Repository of Social Connectedness: The Role of Attachment-Related Avoidance.

- Journal of Personality and Social Psychology*, 98, 573-586.
- Williams, T. J., Schimel, J., Hayes, J. & Martens, A. (2010). The moderating role of extrinsic contingency focus on reactions to threat. *European Journal of Social Psychology*, 40, 300-320.
- Wilson, J. (2005). *Nostalgia: Sanctuary of Meaning*. Lewisburg: Bucknell University Press.
- Yavuz, H., & Van den Bos, K. (2009). Effects of uncertainty and mortality salience on worldview defense reactions in Turkey. *Social Justice Research*, 22, 384-398.
- Zhou, X., Sedikides, C., Wildschut, C., & Gao, D. G. (2008). Counteracting loneliness: On the restorative function of nostalgia. *Psychological Science*, 19, 1023–1029.

Footnotes

1. For all scales, I removed items with low item-total correlations that would either keep constant, or lead to higher, overall scale reliability.
2. Contrary to popular belief, the direct effect of X on Y (C-path) does not need to be significant for a significant indirect effect through M to be present. Some propose that mediation without a significant direct effect should be called *sequential causation*, in that mediation implies a direct effect be present. For discussion of this topic, see Preacher and Hayes (2008).

Appendix

Southampton Nostalgia Scale (Routledge, Arndt, Sedikides, & Wildschut, 2008)

1. How often do you experience nostalgia?

1 2 3 4 5 6 7

Very rarely very frequently

2. How prone are you to feeling nostalgic?

1 2 3 4 5 6 7

Very rarely very frequently

3. Generally speaking, how often do you bring to mind nostalgic experiences?

1 2 3 4 5 6 7

Very rarely very frequently

4. Specifically, how often do you bring to mind nostalgic experiences?

_____ At least once a day

_____ Three to four times a week

_____ Approximately twice a week

_____ Approximately once a week

_____ Once or twice a month

_____ Once every couple of months

_____ Once or twice a year

5. How important is it for you to bring to mind nostalgic experiences?

1 2 3 4 5 6 7

Very rarely very frequently

Batcho Nostalgia Inventory (Batcho, 1995)

Using the following scale, choose a number to indicate what you miss about when you were younger and how much you miss it.

1 2 3 4 5 6 7 8 9

Not at all

Very Much

1. Family
2. Heroes or Heroines
3. Not having to worry
4. Places
5. Someone you loved
6. Friends
7. Things you did
8. Toys
9. The way people were
10. Feelings you had
11. TV shows, movies
12. School
13. Having someone to depend on
14. Holidays
15. The way society was
16. Pet or pets
17. Not knowing sad or evil things
18. Church or Temple, etc.

19. Your house

Nostalgia Manipulation Check (Wildschut et al., 2006)

Instructions: Please indicate your agreement with the following statements (1 = strongly disagree, 5 = strongly agree)

Right now, I am feeling quite nostalgic.

1	2	3	4	5
<i>strongly disagree</i>				<i>strongly agree</i>

Right now, I'm having nostalgic feelings.

1	2	3	4	5
<i>strongly disagree</i>				<i>strongly agree</i>

Control: Spheres of Control Scale (Paulhus, 1983)

Use the following scale to indicate how much you agree or disagree with the following statements.

1	2	3	4	5	6	7
<i>Strongly disagree</i>						<i>Strongly agree</i>

Personal Control

- ___ 1. I can usually achieve what I want if I work hard for it.
- ___ 2. Once I make plans, I am almost certain to make them work.
- ___ 3. I prefer games involving some luck over games requiring pure skill. ($r = .167$)
- ___ 4. I can learn almost anything if I set my mind to it.

- ___ 5. My major accomplishments are entirely due to my hard work and ability.
- ___ 6. I usually do not set goals because I have a hard time following through on them.
- ___ 7. Bad luck has sometimes prevented me from achieving things. ($r = .272$)
- ___ 8. Almost anything is possible for me if I really want it.
- ___ 9. Most of what happens in my career is beyond my control.
- ___ 10. I find it pointless to keep working on something that's too difficult for me.

Interpersonal Control

- ___ 11. In my personal relationships, the other person usually has more control than I do.
- ___ 12. I have no trouble making and keeping friends.
- ___ 13. I'm not good at guiding the course of a conversation with several others.
- ___ 14. I can usually develop a personal relationship with someone I find appealing.
- ___ 15. I can usually steer a conversation toward the topics I want to talk about.
- ___ 16. When I need assistance with something, I often find it difficult to get others to help.
- ___ 17. If there's someone I want to meet, I can usually arrange it.
- ___ 18. I often find it hard to get my point of view across to others.
- ___ 19. In attempting to smooth over a disagreement, I sometimes make it worse.
- ___ 20. I find it easy to play an important part in most group situations.

Adapted Uncertainty Scale (McGregor et al., 2001)

Using the scale below, please indicate the degree to which your feelings right now match each of these adjectives or phrases.

1	2	3	4	5
<i>Very little or not at all</i>				<i>Extremely</i>

1. Mixed
2. Uneasy
3. Torn
4. Bothered
5. Preoccupied
6. Confused
7. Unsure of self or goals
8. Contradictory
9. Distractible
10. Unclear
11. Of two minds
12. Muddled
13. Restless
14. Confused about identity
15. Jumbled
16. Uncomfortable
17. Conflicted
18. Indecisive
19. Chaotic

Authenticity measures:

Extrinsic Contingency Focus Scale (Williams, Schimel, Hayes, & Martens, 2010)

Read each statement and then, in the space next to each statement, write the number from the

following scale that best describes how you feel.

1	2	3	4	5
<i>strongly disagree</i>				<i>strongly agree</i>

1. If I could just improve my performance in life, people would respect me more.
2. I often get concerned with how others are evaluating me.
3. I would compete in a public event, even if I knew I could not win. (excluded study 1 and 2)
4. I work hard at things because of the social approval it provides.
5. I would not bother trying to learn a music instrument if I knew that I would never be able to play well enough to impress people.
6. In social gatherings I hardly ever think about how other people are judging me. (excluded study 1)
7. Being recognized as a hero would be a very rewarding part of saving someone's life.
8. I exercise because it makes me more attractive to others.
9. When I have done a good job, it is important that my supervisor acknowledges it.
10. I feel as though people will respect me whether I am a success or failure.
11. It is not important that I get recognition for the tasks I undertake.
12. I find I have little interest in a task unless there is the possibility that I will get recognition for doing it.
13. When I know I am being evaluated, I feel uneasy until I receive feedback.
14. I interact with people at social gatherings without thinking about how they might affect my reputation. (excluded study 1)
15. I feel as though people like me less when I make mistakes.
16. Whenever I voice my opinion, I feel uneasy unless someone voices agreement.

- 17. I rarely think about how people are evaluating me.
- 18. I have an image to maintain.
- 19. I immediately think of what others will think when I accomplish something great.
- 20. I would go to my high school reunion to show everyone how well I have done since then.

Self-Actualization Index (Jones & Crandall, 1986)

Use the scale below to indicate your agreement or disagreement with the following statements.

1	2	3	4	5	6
<i>strongly disagree</i>				<i>strongly agree</i>	

- 1. I do not feel ashamed of my emotions.
- 2. I feel I must do what others expect of me.
- 3. I believe that people are essentially good and can be trusted. (excluded study 1 and 2)
- 4. I feel free to be angry at those I love.
- 5. It is always necessary that others approve of what I do.
- 6. I don't accept my own weaknesses.
- 7. I can like people without having to approve of them.
- 8. I fear failure.
- 9. I avoid attempts to analyze and simplify complex domains.
- 10. It is better to be yourself than to be popular.
- 11. I have no mission in life to which I feel especially dedicated (excluded study 2).
- 12. I can express my feelings even when they may result in undesirable consequences.
- 13. I do not feel responsible to help anybody. (excluded study 1 and 2)
- 14. I am bothered by fears of being inadequate.

15. I am loved because I give love.

Meaning in Life (Steger, Frazier, Oishi, & Kaler, 2006)

Please take a moment to think about what makes your life feel important to you. Please respond to the following statements as truthfully and accurately as you can, and also please remember that these are very subjective questions and that there are no right or wrong answers. Please answer according to the scale below:

1 2 3 4 5 6 7

Absolutely untrue

Absolutely true

1. I understand my life's meaning.
2. I am looking for something that makes my life feel meaningful.
3. I am always looking to find my life's purpose.
4. My life has a clear sense of purpose.
5. I have a good sense of what makes my life meaningful.
6. I have discovered a satisfying life purpose.
7. I am always searching for something that makes my life feel significant.
8. I am seeking a purpose or mission for my life.
9. My life has no clear purpose.
10. I am searching for meaning in my life.

Tables and Figures

Table 1

Correlations Among Nostalgia Scale Scores and Self-Related Measures

Scale	1	2	3	4	5	6	7	8	9	10
1. Southampton Nostalgia Scale (SNS)	--	.37**	.12*	.02	.13*	-.01	.00	.10	-.06	-.08
2. Batcho Nostalgia Inventory (NI)		--	.08	.06	.14*	.15*	.04	.21**	-.06	-.14*
3. Uncertainty			--	-.32**	.28**	-.33**	-.40**	.39**	-.51**	-.49**
4. Presence of meaning				--	-.36**	.45**	.48**	-.22**	.48**	.39**
5. Search for meaning					--	-.20**	-.25**	.38**	-.34**	-.40**
6. Personal control						--	.61**	-.30**	.45**	.42**
7. Interpersonal control							--	-.36**	.58**	.54**
8. Extrinsic contingency focus								--	-.66**	-.89**
9. Self-actualization									--	.92**
10. Authenticity Index										--

Note. * $p < .05$, ** $p < .01$

Table 2

Means across ordinary event and nostalgic event conditions for nostalgia, control, authenticity, and meaning

	Ordinary Event			Nostalgic Event		
	M	SD	n	M	SD	n
Nostalgia**	2.72	1.03	25	3.66	.90	25
Personal Control*	4.75	.73	25	5.24	.86	25
Interpersonal Control	4.72	.69	25	5.10	.76	25
Extrinsic Contingency Focus**	3.26	.38	25	2.99	.34	25
Self-Actualization	3.76	.52	25	3.90	.62	25
Autonomy*	3.75	.49	25	4.10	.58	25
Presence of Meaning	4.51	.92	25	4.92	1.30	25
Search for Meaning	5.00	1.17	25	4.48	1.26	25

* $p \leq .05$. ** $p \leq .01$.

Note: Boldface type highlights significantly different means across conditions.

Table 3

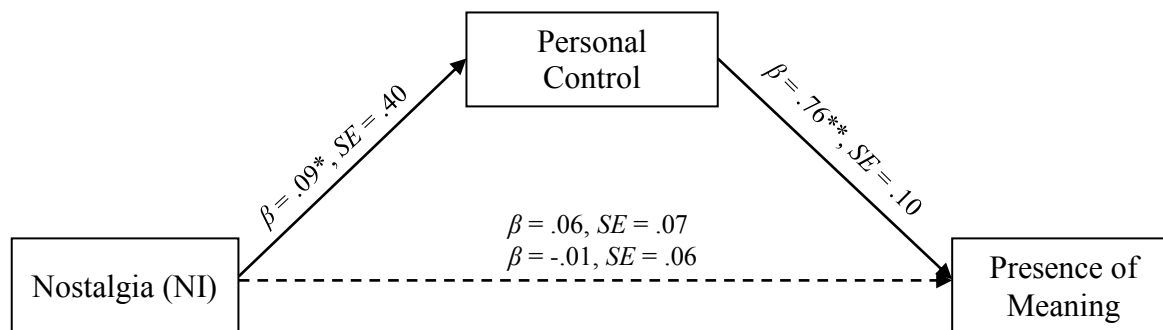
Magnitude and Confidence Intervals of the Multiple Mediation Effects of Event Condition with Personal Control, Extrinsic Contingency Focus, and Autonomy as the Mediators for Presence of Meaning

	Bootstrap Results for Mediation Effects		
	Mediation Effect (<i>SE</i>)	95% Confidence Interval (CI)	
		Lower	Upper
Mediators			
Total mediated effect	.54 (.23)	.19	1.10
Personal control	.19 (.13)	.01	.52
Extrinsic contingency focus	.22 (.13)	.02	.56
Autonomy	.15 (.12)	-.02	.46

Note. Boldface type highlights a significant effect as determined by the 95% bias corrected and accelerated confidence interval (95% CI).

Figure 1

Mediation test of the relationship between nostalgia and presence of meaning, Study 1.



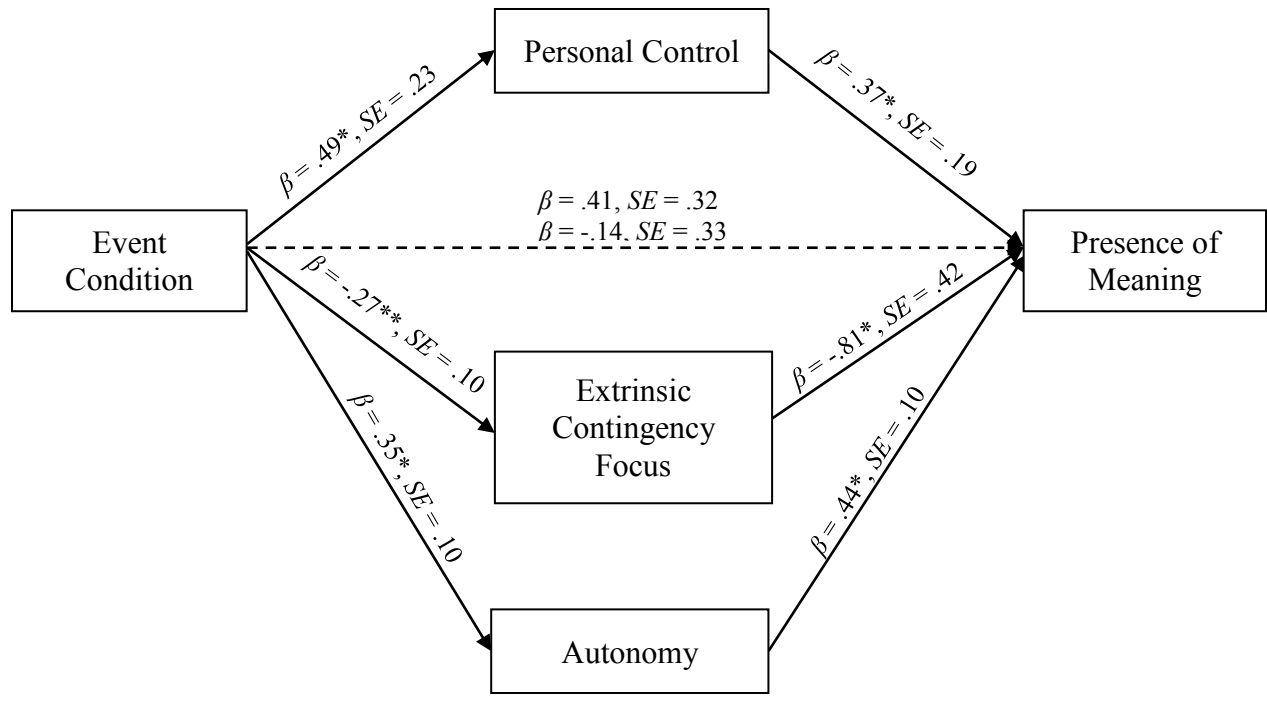
Notes: All coefficients represent unstandardized regression coefficients. Dashed lines highlight nonsignificant relationships and solid lines highlight significant relationships.

* $p \leq .05$. ** $p \leq .01$.

Figure 2

Multiple mediation test of the relationship between nostalgia and presence of meaning (study 2).

All coefficients represent unstandardized regression coefficients. Dashed lines highlight nonsignificant relationships and solid lines highlight significant relationships.



* $p \leq .06$. ** $p \leq .01$.

Note: Event Condition was dummy coded such that 0=ordinary event and 1=nostalgic event