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Abstract

This research examined the proposition that nostalgia is not simply a past-oriented emotion, but its scope extends into the future, and, in particular, a positive future. We adopted a convergent validation approach, using multiple methods to assess the relation between nostalgia and optimism. Study 1 tested whether nostalgic narratives entail traces of optimism; indeed, nostalgic (compared with ordinary) narratives contained more expressions of optimism. Study 2 manipulated nostalgia through the recollection of nostalgic (vs. ordinary) events, and showed that nostalgia boosts optimism. Study 3 demonstrated that the effect of nostalgia (induced with nomothetically relevant songs) on optimism is mediated by self-esteem. Finally, Study 4 established that nostalgia (induced with idiographically relevant lyrics) fosters social connectedness, which subsequently increases self-esteem, which then boosts optimism. The nostalgic experience is inherently optimistic and paints a subjectively rosier future.

Keywords

nostalgia, optimism, emotion, memory, self-esteem, social connectedness

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The capacity for mental time travel is considered uniquely human (Sedikides & Skowronski, 1997; Suddendorf & Corballis, 2007). Recollection of the past, consideration of the present, and projection onto the future are interdependent cognitive processes with a shared neurological substrate (Johnson & Sherman, 1990; Klein, Robertson, & Delton, 2010). Hence, if the present self derives positivity from one's past, as research shows is typically the case in nostalgic reverie (Hepper, Ritchie, Sedikides, & Wildschut, 2012; Sedikides, Wildschut, Arndt, & Routledge, 2008; Wildschut, Sedikides, Arndt, & Routledge, 2006), this positivity could stretch out in time and produce a brighter outlook on the future. Stated otherwise, when individuals become nostalgic, they may accordingly feel optimistic about their future. We test this proposition while also examining mechanisms through which nostalgia may elicit optimism.

Historical and Contemporary Conceptions of Nostalgia

Nostalgia has historically been conceptualized as pathological maladaptation to the present reality and as trepidation of the future (Sedikides et al., 2008; Sedikides, Wildschut, & Baden, 2004). In the 17th century, physician Johannes Hofer (1688/1934) coined the term *nostalgia* to describe physical and psychological symptoms among

Swiss mercenaries fighting away from home and for assorted European monarchs. Since then, nostalgia has been labeled a neurological disease (Scheuchzer, 1731) and a psychological disorder (e.g., repressive compulsion, psychosis; Sterba, 1940). The consensus was that nostalgic individuals are preoccupied with bygone events or objects, such that “their longing for the past matches their dislike of the present and their dread of the future” (Castelnuovo-Tedesco, 1980, p. 121). In nostalgia, “the past is lost. The future can never be realized. All is empty. All is lost.” (Kleiner, 1977, p. 472).

Nostalgia, then, was long considered a doomed state of mind: an escapist reaction to the demands of the present and an anxiety toward the future (Nawas & Platt, 1965). These views began to fade in the late 20th century with the suggestion that nostalgia may, to some extent, be a positive and useful emotion (Davis, 1979), although robust opposition to this

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suggestion remained the norm (for reviews, see Sedikides et al., 2004; Sedikides, Wildschut, Arndt, & Routledge, 2006).

Recent empirical forays have paved the way toward rehabilitation of the construct of nostalgia. Laypersons indicate that positive feelings (e.g., happiness, fondness) are more prototypical of nostalgia than are negative feelings (e.g., sadness, regret; Hepper, Ritchie, et al., 2012). Indeed, nostalgic narratives may be bittersweet, but their positive affect (PA; e.g., tenderness) far outweighs their negative affect (e.g., loss; Holak & Havlena, 1998; Stephan, Sedikides, & Wildschut, 2012). In addition, content analyses on nostalgic narratives reveal that nostalgia is a self-relevant emotion, and that nostalgic memories entail interactions with valued others in the context of momentous life occasions (Holak & Havlena, 1992; Wildschut et al., 2006). Furthermore, nostalgic narratives are distinguishable from narratives of positive or ordinary events: The linguistic representation of nostalgic narratives involves the use of more meaning-ascribing abstract terms, elicits a greater sense of authenticity, and manifests a bittersweet affective signature (Stephan et al., 2012). It follows that the experimental induction of nostalgia may confer psychological benefits, and this is the case. For example, nostalgia raises self-esteem (Hepper, Ritchie, et al., 2012; Vess, Arndt, Routledge, Sedikides, & Wildschut, 2012; Wildschut et al., 2006) and fosters social connectedness (Wildschut et al., 2006; Wildschut, Sedikides, Routledge, Arndt, & Cordaro, 2010; Zhou, Sedikides, Wildschut, & Gao, 2008).

Understanding Nostalgia in a Brand New Light: The Future Orientation of Nostalgia

In all, nostalgia, a seemingly past-oriented emotion, renders the present more positive. But does it also shed a positive light on the future? To be exact, does it breed optimism?

The literature is mute on the topic. Yet, answers to these questions can have theoretical and practical implications. From a theoretical standpoint, answers may inform the nature of nostalgia and the breadth of its psychological utility, as well as provide a broader understanding of the implications of the human capacity for temporal thought. From a practical standpoint, answers may identify a critical antecedent of optimism—a trait or state linked with enhancing well-being and effective coping, and with dampening negative affect and symptom reporting (Andersson, 1996; Carver, Scheier, & Segerstrom, 2010; K. E. Hart & Hittner, 1995; Isaacowitz, 2005; Scheier & Carver, 1992). With the exception of a few studies on genetic (vs. environmental) and developmental influences on optimism (Ek, Remes, & Sovio, 2004; Gillham & Reivich, 2004; Heinonen, Rääkkönen, & Keltikangas-Järvinen, 2005; Mosing, Zietsch, Shekar, Wright, & Martin, 2009; Scheier & Carver, 1993), research on trait, let alone state, antecedents or causes of optimism is sparse.

Sociologist Fred Davis (1977) was the first to suggest that nostalgia may promote a sunny outlook on the future. He mused,

It (nostalgia) reassures us of past happiness and accomplishment; and, since these still remain on deposit, as it were, in the bank of our memory, it simultaneously bestows upon us a certain worth, irrespective of how present circumstances may seem to question or obscure this. And current worth, as our friendly bank loan officer assures us, is titled to at least some claim on the future as well. (p. 420)

Davis's idea that nostalgia constitutes a deposit in the bank of memory to be retrieved in the service of the future is consistent with recent findings that individuals treasure nostalgic memories as a resource for maximizing future well-being (Zauberman, Ratner, & Kim, 2009). The idea is also consistent with other lines of inquiry.

First, recollection and future projection share cognitive processes and neurological underpinnings. Clinical evidence indicates that patients with difficulty in retrieving the past also have problems imagining new experiences (Hassabis, Kumaran, Vann, & Maguire, 2007; Klein, Loftus, & Kihlstrom, 2002; Tulving, 1985) or describing their future in detail (Addis, Sacchetti, Ally, Budson, & Schacter, 2009; Brown, Dorfman, Marmar, & Bryant, 2012). Similarly, neuroimaging studies show that thinking about the past and the future involves a common neural network (Buckner & Carroll, 2007; Hassabis & Maguire, 2007; Schacter & Addis, 2007; Viard et al., 2011). The human mind, then, recruits similar processes in formulating mental representations of past and future events. It follows that, if nostalgic recollection activates past positivity, this positivity may be projected onto the future.

Second, recollection and future projection are interdependent (Johnson & Sherman, 1990). Past experiences predict optimism in judgment or decision making (Albarracín & Wyer, 2000) and in interpersonal relationships (Carnelley & Janoff-Bulman, 1992). Accordingly, nostalgic recollection of fond memories may generate a buoyant outlook on the future.

How Would Nostalgia Elicit Optimism? The Role of Self-Esteem and Social Connectedness

What are the mechanisms through which nostalgia may elicit optimism? Davis (1977), as quoted above, speculated that, when nostalgic, individuals retrieve positivity accumulated from the past to boost their current self-worth, thus feeling upbeat about the future. In line with this speculation, we propose that self-esteem constitutes a key mechanism linking nostalgia to optimism or through which nostalgia infuses optimism. Individuals may use their recollections of the past to raise their self-worth (Peeetz & Wilson, 2008; Wilson & Ross, 2003), and, as we mentioned previously, research has

specifically established that nostalgia lifts self-esteem (Hepper, Ritchie, et al., 2012; Wildschut et al., 2006). Importantly, self-esteem is associated with optimism (Chemers, Watson, & May, 2000; Mäkikangas & Kinnunen, 2003; Mäkikangas, Kinnunen, & Feldt, 2004) and shares a genetic basis with it (Saphire-Bernsteina, Way, Kim, Sherman, & Taylor, 2011). Nevertheless, self-esteem and optimism are sufficiently distinct (Fontaine & Jones, 1997; Scheier, Carver, & Bridges, 1994) to warrant treatment as relatively independent resources.

But where does self-esteem originate? A commonality among relevant theoretical statements (contingencies of self-worth: Crocker & Wolfe, 2001; sociometer theory: Leary, 2005; terror-management theory: Pyszczynski, Greenberg, Solomon, Arndt, & Schimel, 2004) is an emphasis on the social or sociocultural bases of self-esteem. Self-esteem originates in, or is greatly influenced by, relational and socio-cultural processes. From the perspective of the current investigation, social connectedness may form a pivotal foundation for self-esteem. As mentioned above, research has established that nostalgia strengthens social connectedness (Wildschut et al., 2006, 2010). For example, sociality (e.g., family, love) is a centrally prototypical feature of the construct of nostalgia (Hepper, Ritchie, et al., 2012). In addition, experimentally induced nostalgia prompts stronger perceived affiliation with others (Zhou et al., 2008; Zhou, Wildschut, Sedikides, Shi, & Feng, 2012). Social connectedness, in turn, would augment self-esteem, which would boost optimism. Indeed, preliminary evidence indicates that social support can operate through self-esteem to influence optimism (Symister & Friend, 2003). Of course, it is also possible that social connectedness (having been induced through experimental manipulations of nostalgia) directly incites an upsurge in optimism, given that social connectedness (i.e., perceived social support) is associated with or predicts optimism (Brissette, Scheier, & Carver, 2002; MacLeod & Conway, 2005; Segerstrom, 2007). We test for these possibilities in the present research.

Overview

We examine for the first time the future orientation of nostalgia and the possibility that nostalgia serves as a resource through which individuals may generate optimism internally, that is, with no reliance on accomplishments or external signals of social acceptance. We conducted four studies. In Study 1, we tested whether nostalgia naturally incorporates optimism, by counting the percentage of optimism-related words in nostalgic narratives. The remaining three studies featured experimental inductions of nostalgia. We adopted a convergent validation approach (Campbell & Fiske, 1959) in manipulating nostalgia via multiple methods. In Study 2, we induced nostalgia via recollection of nostalgic (vs. ordinary autobiographical) events, and asked whether nostalgia boosts optimism. In Study 3, we manipulated nostalgia with a

nomothetically relevant nostalgic (vs. control) song. We tested whether self-esteem mediates the relation between nostalgia and optimism. Finally, in Study 4, we presented idiographically relevant nostalgic (vs. control) lyrics. We examined whether social connectedness (a) forms the basis for self-esteem's mediational role in the relation between nostalgia and optimism, or (b) mediates directly the relation between nostalgia and optimism.

Study 1

Previous research has highlighted the strengths of word-level linguistic analysis in uncovering psychological processes within written texts (Rude, Gortner, & Pennebaker, 2004). We used this methodology to investigate, in Study 1, whether nostalgic narratives contain more optimism-related words (optimism expressions) than ordinary autobiographical narratives.

We also sought to examine the role of PA in the relation between nostalgia and optimism. The content of nostalgic narratives is more positive than negative (Stephan et al., 2012; Wildschut et al., 2006). In addition, nostalgia typically (Hepper, Ritchie, et al., 2012; Stephan et al., 2012; Verplanken, 2012; Wildschut et al., 2006, 2010; Zhou, Wildschut, Sedikides, Shi, et al., 2012, Study 1) but not always (Zhou, Wildschut, Sedikides, Shi, et al., 2012, Studies 2-4) increases PA. Although research has begun to establish unique effects of nostalgia above and beyond PA (Routledge, Wildschut, Sedikides, Juhl, & Arndt, 2012, Studies 2-3; Stephan et al., 2012, Study 2), it is not clear whether nostalgia would entail optimism above and beyond PA.

Method

Participants. One hundred and two University of Southampton undergraduates (92 women, 10 men) participated for course credit. Participant age ranged from 18 to 38 years ($M = 20.09$, $SD = 2.87$). We randomly assigned participants to the nostalgia and control conditions. Given that the results were not qualified by gender (with acknowledgment of the small number of male participants), we omitted this variable from subsequent analyses.

Procedure and materials. In the nostalgia condition, participants were instructed to "bring to mind a nostalgic event in your life. Specifically, try to think of a past event that makes you feel most nostalgic." In the control condition, participants were instructed to "bring to mind an ordinary event in your life." Participants in both conditions took a few moments to think about the event and how it made them feel. They were then allotted 5 min to provide a written account of the experience. Next, participants completed a 3-item nostalgia manipulation check (1 = *strongly disagree*, 6 = *strongly agree*): "Right now, I am feeling quite nostalgic," "Right now, I am having nostalgic feelings," "I feel

nostalgic at the moment" ($\alpha = .97$, $M = 3.92$, $SD = 1.47$). The nostalgia induction and manipulation check have been validated by prior research in the United Kingdom (Hepper, Ritchie, et al., 2012; Stephan et al., 2012; Wildschut et al., 2006) the United States (Routledge, Arndt, Sedikides, & Wildschut, 2008; Routledge et al., 2011, 2012), and also in China (Zhou et al., 2008; Zhou, Wildschut, Sedikides, Chen, & Vingerhoets, 2012; Zhou, Wildschut, Sedikides, Shi, et al., 2012).

Participant-generated narratives were transcribed by a research assistant and analyzed with Linguistic Inquiry and Word Count software (Pennebaker, Booth, & Francis, 2007). LIWC works according to an internal dictionary of approximately 4,500 words, and calculates the relative frequency (i.e., proportion) of different word categories. Participants wrote an average of 117.74 words ($SD = 39.61$). Average word counts in the nostalgia ($M = 122.85$, $SD = 40.61$) and control ($M = 112.20$, $SD = 38.13$) conditions did not differ significantly, $F(1, 100) = 1.86$, $p = .18$, $\eta_p^2 = .02$. Across all narratives, the LIWC dictionary was able to classify 77.06% of words ($SD = 6.40$), a typical ratio in studies using LIWC (for an overview, see Pennebaker & Graybeal, 2001). We focused on the proportion of words that fell into the optimism category. This category comprises 70 words expressing optimism (e.g., hope, optimistic, determined). We arrived at the proportion of optimism expressions by dividing the number of such words by the total word count for a given narrative.

Following the event description, participants completed the Positive and Negative Affect Schedule questionnaire (PANAS; Watson, Clark, & Tellegen, 1988). All items were preceded by the stem "Thinking about this event makes me feel." The PA measure comprised 10 items (1 = *not at all*; 5 = *extremely*): "interested," "excited," "strong," "enthusiastic," "attentive," "active," "proud," "alert," "inspired," "determined" ($\alpha = .92$, $M = 2.72$, $SD = 0.77$). The NA measure consisted of 10 items: "scared," "irritable," "ashamed," "nervous," "distressed," "upset," "guilty," "hostile," "jittery," "afraid" ($\alpha = .90$, $M = 1.31$, $SD = 0.48$).

Results and Discussion

Manipulation check. As intended, participants in the nostalgia condition ($M = 4.79$, $SD = 1.04$) reported feeling more nostalgic than those in the control condition ($M = 2.98$, $SD = 1.29$), $F(1, 100) = 61.25$, $p = .001$, $\eta_p^2 = .38$.

PANAS ratings. Participants in the nostalgia condition ($M = 2.85$, $SD = 0.74$) reported marginally more PA than those in the control condition ($M = 2.58$, $SD = 0.79$), $F(1, 100) = 3.30$, $p = .07$, $\eta_p^2 = .032$. Participants in the nostalgia condition ($M = 1.306$, $SD = 0.48$) did not report more NA than those in the control condition ($M = 1.308$, $SD = 0.49$), $F(1, 100) = 0.001$, $p = .98$, $\eta_p^2 < .001$. It is noteworthy that, even in the control condition, PA ($M = 2.58$) exceeded NA ($M = 1.31$) by a

considerable margin, $F(1, 48) = 78.92$, $p < .001$, $\eta_p^2 = .62$. It is clearly not the case that nostalgic narratives included more optimism expressions merely because participants in the control condition recalled tedious or negative events. This reinforces prior evidence that the control condition provides an adequate and substantive baseline for assessing the effects of nostalgia (Hepper, Ritchie, et al., 2012; Routledge et al., 2008, 2011, 2012; Stephan et al., 2012; Vess et al., 2012; Wildschut et al., 2006, 2010; Zhou et al., 2008; Zhou, Wildschut, Sedikides, Chen, et al., 2012; Zhou, Wildschut, Sedikides, Shi, et al., 2012).

Optimism. Nostalgic narratives ($M = 0.61\%$, $SD = .78$) contained a significantly higher proportion of optimism expressions than ordinary autobiographical narratives ($M = 0.28\%$, $SD = .48$), $F(1, 100) = 6.57$, $p = .012$, $\eta_p^2 = .06$. The results are consistent with the possibility that the experience of nostalgia entails optimism.

Mediational analyses. We tested whether PA mediated the higher frequency of optimism expressions in nostalgic (compared with ordinary) narratives. We used a bootstrapping analysis (Hayes, 2012; model 4; 10,000 resamples) to test the indirect effect of nostalgic (vs. ordinary) recollection on optimism expressions via PA. When PA was included as a mediator, the direct effect of nostalgic (vs. ordinary) recollection on optimism expressions remained significant, $M_{\text{direct effect}} = .17$, $SE = .066$, $t(99) = 2.518$, $p = .013$. The indirect effect via PA was not significant, $M_{\text{indirect effect}} = -.001$, $SE = .014$, 95% CI = $[-.031, .027]$. Overall, the more frequent occurrence of optimism expressions in nostalgic (vs. ordinary) narratives was independent of affective positivity induced by event recollection.

Study 2

The key objective of Study 2 was to corroborate and extend the Study 1 findings by gauging the impact of nostalgia on optimism. We experimentally induced nostalgia and assessed optimism. In addition, we tested PA as a mechanism through which nostalgia may increase optimism. We hypothesized that nostalgic engagement would elicit higher optimism compared with engagement in ordinary autobiographical recollection, above and beyond PA.

Method

Participants. One hundred twenty seven University of Missouri—Columbia undergraduates (65 men, 62 women) took part for course credit. Their ages ranged from 17 to 41 years ($M = 18.95$, $SD = 2.16$). We randomly assigned participants to the nostalgia and control conditions. We omitted gender from the reported results, as preliminary analyses indicated that this variable did not qualify the findings. Degrees of freedom vary slightly due to missing values.

Procedure and materials. The nostalgia manipulation and manipulation check ($\alpha = .91$, $M = 3.55$, $SD = 1.38$) were identical to those of Study 1. Following the manipulation check, participants completed measures of PA and optimism (1 = *strongly disagree*; 5 = *strongly agree*), all preceded by the stem “Thinking about this event makes me feel.” The PA measure, which we constructed for the purposes of this study (cf., Martin, Abend, Sedikides, & Green, 1997), comprised four items: “puts me in a great mood,” “makes me feel good,” “gives me positive feelings,” and “makes me feel great” ($\alpha = .97$, $M = 3.72$, $SD = 1.16$). Likewise, the optimism measure, which we also constructed for the objectives of this study, consisted of four items: “makes me feel ready to take on new challenges,” “makes me feel optimistic about my future,” “makes me feel like the sky is the limit,” and “gives me a feeling of hope about my future” ($\alpha = .90$, $M = 3.45$, $SD = 0.94$).

Results and Discussion

Manipulation check. As intended, participants in the nostalgia condition ($M = 4.02$, $SD = 1.29$) reported feeling more nostalgic than those in the control condition ($M = 3.08$, $SD = 1.31$), $F(1, 122) = 16.12$, $p < .001$, $\eta_p^2 = .12$.

PA. Participants in the nostalgia condition ($M = 3.93$, $SD = 1.10$) reported more PA than those in the control condition ($M = 3.51$, $SD = 1.20$), $F(1, 124) = 4.13$, $p = .044$, $\eta_p^2 = .032$.

Optimism. As hypothesized, nostalgic participants ($M = 3.67$, $SD = 0.88$) expressed more optimism than control participants ($M = 3.24$, $SD = 0.96$), $F(1, 124) = 6.82$, $p = .010$, $\eta_p^2 = .052$.

Mediational analyses. Participants in the nostalgia condition reported more PA than those in the control condition. Thus, PA qualifies as a potential mediator of nostalgia’s effect on optimism. We used a bootstrapping analysis (Hayes, 2012; Model 4; 10,000 resamples) to test the direct effect of nostalgia on optimism, and the indirect effect of nostalgia via PA. The direct effect was significant: $M_{\text{direct effect}} = .319$, $SE = .158$, $t(123) = 2.014$, $p = .046$. The indirect effect was also significant: $M_{\text{indirect effect}} = .110$, $SE = .071$, 95% CI = [.010, /.294]. Thus, nostalgia boosted optimism directly, and also indirectly via increased PA. Such evidence extends prior findings that have begun to establish unique effects of nostalgia above and beyond PA (Routledge et al., 2011; Stephan et al., 2012; Turner, Wildschut, & Sedikides, 2012; Zhou, Wildschut, Sedikides, Shi, et al., 2012).

Study 3

To begin establishing convergent validity, we implemented in Study 3 an alternative manipulation that capitalizes on music’s capacity to evoke nostalgia (Barrett et al., 2010; C.

M. Hart et al., 2011; Routledge et al., 2011). Specifically, we induced nostalgia by presenting participants with a nominally relevant nostalgic song. We hypothesized that listening to a nostalgic (compared with a control) song would elevate optimism. Furthermore, we relied on a relatively large sample to examine the generality of this effect across gender and age. More important, we tested the mediational role of self-esteem while also taking into account the potential role of PA.

Method

Six hundred and sixty four volunteers (345 women, 319 men) completed the study materials online after visiting the website for “Top 2000,” a popular Dutch radio and television program that is aired annually around Christmas. The “Top 2000” website displayed an invitation to participate in research, and interested visitors could navigate to another website with study materials. Data collection was completed in December 2011 and January 2012. Participant age ranged from 14 to 67 years ($M = 36.58$, $SD = 13.18$). Nine percent of participants were aged 14 to 19 years; 29% were aged 20 to 29; 17% were aged 30 to 39; 22% were aged 40 to 49; 20% were aged 50 to 59; and 2% were aged 60 and over. In addition, 97% of participants identified The Netherlands as their country of birth.

We randomly assigned participants to listen either to a nostalgic or control song. We presented songs via a media player in participants’ Internet browser. The Dutch artist Wim Sonneveld performed the songs. The nostalgic song was titled “Het Dorp [The Village]” (released 1974), and the control song was titled “Nikkelen Nelis [Nicked Nelis]” (released 1965). In a pretest (December 2010 to January 2011), 519 (284 women, 235 men) “Top 2000” listeners rated (1 = *not at all*, 6 = *very much*) the extent to which these songs produced nostalgia (“nostalgia” and “longing for the past”) and PA (“happiness” and “positive mood”). Pretest participants listened to both songs in counterbalanced order. As intended, the nostalgic song ($M = 4.27$, $SD = 1.48$) produced more nostalgia than the control song ($M = 3.05$, $SD = 1.54$), $F(1, 518) = 380.90$, $p < .001$. In addition, the nostalgic song ($M = 3.15$, $SD = 1.36$) did not produce more PA than the control song ($M = 3.06$, $SD = 1.29$), $F(1, 518) = 2.09$, $p = .15$.

Assessment of variables. Due to strict space limitations on the survey, we assessed all variables with brief, two-item measures (1 = *not at all*, 5 = *very much*).

Manipulation check. Participants rated the extent to which listening to the assigned song induced nostalgia (“nostalgia,” “longing for the past”; $r[664] = .67$, $M = 3.03$, $SD = 1.29$).

PA. Participants rated the extent to which listening to the assigned song induced PA (“happy,” “positive mood”; $r[664] = .76$, $M = 2.79$, $SD = 1.06$).

Table 1. Tests of Main Effects and Interactions Among Nostalgia, Gender, and Age in Study 3.

Effect	$F(1, 656)$	p	η_p^2
Nostalgia	24.02	<.001	.04
Gender	0.00	.944	.00
Age	12.79	<.001	.02
Nostalgia \times Gender	3.91	.048	.01
Nostalgia \times Age	0.06	.800	.00
Gender \times Age	0.02	.888	.00
Nostalgia \times Gender \times Age	0.01	.939	.00

Self-esteem. Participants rated the extent to which listening to the assigned song induced self-esteem (“feel good about myself,” “satisfied with myself”); $r[664] = .90$, $M = 2.69$, $SD = 1.11$).

Optimism. Finally, participants rated the extent to which listening to the assigned song induced optimism (“optimistic about the future,” “hopeful about the future”); $r[664] = .91$, $M = 2.71$, $SD = 1.19$).

Results and Discussion

Manipulation check. As intended, participants who listened to the nostalgic song ($M = 3.44$, $SD = 1.26$) reported higher levels of nostalgia than those who listened to the control song ($M = 2.58$, $SD = 1.17$), $F(1, 662) = 81.14$, $p < .001$, $\eta_p^2 = .109$.

PA. In replication of the abovementioned pilot study, participants who listened to the nostalgic song ($M = 2.86$, $SD = 1.05$) did not report more PA than those who listened to the control song ($M = 2.72$, $SD = 1.07$), $F(1, 662) = 2.87$, $p = .091$, $\eta_p^2 = .004$.

Self-esteem. Replicating past findings (Hepper, Ritchie, et al., 2012; Wildschut et al., 2006), participants in the nostalgia condition ($M = 2.79$, $SD = 1.07$) reported higher self-esteem than those in the control condition ($M = 2.58$, $SD = 1.16$), $F(1, 662) = 5.77$, $p = .02$, $\eta_p^2 = .009$.

Optimism. As hypothesized, participants who listened to the nostalgic song reported higher optimism ($M = 2.92$, $SD = 1.15$) than those who listened to the control song ($M = 2.48$, $SD = 1.20$), $F(1, 662) = 23.69$, $p < .001$, $\eta_p^2 = .035$.

Generality of nostalgia’s effect on optimism. The balanced gender composition and wide age range within our sample enabled a strong test of the generality of nostalgia’s effect on optimism. We conducted a Nostalgia \times Gender \times Age ANCOVA, with age treated as a continuous predictor (i.e., covariate, Tabachnick & Fidell, 2007) and with optimism as the dependent variable. We centered participant age prior to the analyses. We present results in Table 1. The nostalgia and

age main effects were significant, indicating that optimism was higher among participants who listened to the nostalgic (compared with the control) song and who were older (compared with younger; $B_{\text{age,optimism}} = .012$, $SE = .003$). The Nostalgia \times Age interaction was not significant, suggesting that the effect of nostalgia on optimism was independent of age. The Nostalgia \times Gender interaction was significant. Tests of simple effects showed that, for men, there was a large and statistically significant nostalgia effect, $F(1, 656) = 22.85$, $p < .001$, $\eta_p^2 = .03$; for women, the nostalgia effect was smaller but also statistically significant, $F(1, 656) = 4.43$, $p = .036$, $\eta_p^2 = .01$. To conclude, the effect of nostalgia on optimism generalized across age and gender.

Mediational analyses. Self-esteem qualified as a potential mediator of nostalgia’s effect on optimism, but PA did not. Regardless, and for data-analytic continuity purposes, we included self-esteem and PA as parallel mediators in a bootstrapping analysis (Hayes, 2012; model 4; 10,000 resamples). The direct effect of nostalgia on optimism was significant, $M_{\text{direct effect}} = .14$, $SE = .03$, $t(660) = 4.596$, $p < .001$. The indirect effect of nostalgia on optimism via self-esteem was also significant, $M_{\text{indirect effect}} = .06$, $SE = .03$, 95% CI = [.01, .12]. However, and as expected, the indirect effect of nostalgia on optimism via PA was not significant, $M_{\text{indirect effect}} = .02$, $SE = .01$, 95% CI = [−.002, .04]. Nostalgia boosted optimism directly, and also indirectly via increased self-esteem, but not via PA.

Study 4

To further establish convergent validity, we implemented in Study 4 an additional music-based, idiographic manipulation of nostalgia (Routledge et al., 2011). We induced nostalgia by presenting participants with lyrics to songs that they had previously identified as nostalgic (compared with control lyrics). We hypothesized that reading nostalgic (compared with control) song lyrics would raise optimism. In addition, we examined the role of social connectedness and self-esteem. Does nostalgia exert an indirect effect on optimism via social connectedness and self-esteem? Specifically, does nostalgia imbue individuals with a sense of social connectedness, which in turn lifts self-esteem? We tested whether this sequential path constitutes a basis for nostalgia’s effect on optimism. We hypothesized that the indirect effect of social connectedness and self-esteem would explain the rise in optimism, above and beyond PA.

Method

Participants. Participants were 127 University of Southampton undergraduates fulfilling a course requirement. Due to technical problems, we were able to record gender and age only for 84 individuals (69 women, 15 men). For this group, participant age ranged from 18 to 42 years ($M = 19.38$, $SD = 3.42$).

Among participants with identifiable gender information, the results were not qualified by gender, and so we omitted this variable from subsequent analyses.

Procedure and materials. The study involved a preliminary and an experimental session separated by 3 weeks. In the preliminary session, participants received a dictionary definition of nostalgia (“A sentimental longing or wistful affection for the past”; *The New Oxford Dictionary of English*, 1998, p. 1266) and then listed the titles and performing artists of three songs that made them feel nostalgic. Prior to the experimental session, we randomly allocated participants to conditions. For participants in the nostalgia condition, we retrieved the lyrics of a song that they listed as nostalgic. We yoked participants in the control condition to a participant in the nostalgia condition and designated them to receive the same lyrics as that person. (We ascertained that the relevant song was not one that the control participant also considered nostalgic.) In this way, we were able to use the same set of lyrics in the nostalgia and control conditions, and thus hold constant the content of the lyrics in both conditions (Routledge et al., 2011). During the experimental session, participants read the prepared lyrics (nostalgic or control) and then completed the manipulation check and measures.

Manipulation check. The manipulation check was identical to that of Studies 1 and 2 (1 = *strongly disagree*, 6 = *strongly agree*; $\alpha = .98$, $M = 3.74$, $SD = 1.47$).

PA. We assessed PA with two items. Participants rated the extent to which reading the lyrics made them feel: “happy” and “in a good mood” (1 = *strongly disagree*, 6 = *strongly agree*; $r[127] = .90$, $M = 3.99$, $SD = 1.32$).

Self-esteem. We assessed self-esteem with four items (Hepper, Ritchie, et al., 2012; Wildschut et al., 2006). Participants rated the extent to which reading the lyrics made them feel: “good about myself,” “I like myself better,” “I like myself more,” and “I have many positive qualities” (1 = *strongly disagree*, 6 = *strongly agree*; $\alpha = .90$, $M = 3.28$, $SD = 1.09$).

Social connectedness. We assessed social connectedness with four items (Hepper, Ritchie, et al., 2012; Wildschut et al., 2006). Participants rated the extent to which reading the lyrics made them feel: “connected to loved ones,” “protected,” “loved,” and “trust others” (1 = *strongly disagree*, 6 = *strongly agree*; $\alpha = .91$, $M = 3.58$, $SD = 1.28$).

Optimism. We assessed optimism with the Revised Life Orientation Test (LOT-R; Scheier et al., 1994). The LOT-R comprises six items (plus four fillers) that assess optimism in terms of having positive, and not negative, expectancies for the future (e.g., “In uncertain times, I usually expect the best,” “If something can go wrong for me, it will”

[reverse-scored]; 1 = *strongly disagree*, 5 = *strongly agree*; $\alpha = .85$, $M = 3.39$, $SD = .81$).

Results and Discussion

Manipulation check. As intended, participants who read personally nostalgic lyrics ($M = 4.55$, $SD = 0.93$) reported feeling more nostalgic than those who read control lyrics ($M = 2.86$, $SD = 1.45$), $F(1, 125) = 61.45$, $p < .001$, $\eta_p^2 = .33$.

PA. Participants who read personally nostalgic lyrics ($M = 4.44$, $SD = 1.22$) reported higher levels of PA than those who read control lyrics ($M = 3.51$, $SD = 1.27$), $F(1, 125) = 17.76$, $p < .001$, $\eta_p^2 = .12$.

Social connectedness. Participants who read personally nostalgic lyrics ($M = 4.07$, $SD = 1.16$) reported higher levels of social connectedness than those who read control lyrics ($M = 3.04$, $SD = 1.20$), $F(1, 125) = 24.28$, $p < .001$, $\eta_p^2 = .16$.

Self-esteem. Participants who read personally nostalgic lyrics ($M = 3.64$, $SD = 1.07$) reported higher levels of self-esteem than those who read control lyrics ($M = 2.89$, $SD = 0.98$), $F(1, 125) = 16.61$, $p < .001$, $\eta_p^2 = .12$.

Optimism. Consistent with the hypothesis, participants who read personally nostalgic lyrics ($M = 3.55$, $SD = 0.88$) reported higher levels of optimism than those who read control lyrics ($M = 3.21$, $SD = 0.70$), $F(1, 125) = 5.67$, $p = .02$, $\eta_p^2 = .04$.

Mediational analyses. We carried out the analyses using AMOS within SPSS for Windows. We calculated bias-corrected 95% bootstrap confidence intervals (CIs) and bootstrap standard errors for direct and indirect effects (10,000 bootstrap samples). We present tests of direct and indirect effects in Table 2. All but two direct effects (i.e., paths in Figure 1) were significant. Nostalgia increased social connectedness (path a) and self-esteem (above and beyond social connectedness; path b), but it did not directly increase optimism (above and beyond social connectedness and self-esteem; path c). Social connectedness predicted increased self-esteem (above and beyond nostalgia; path d), but it did not directly predict increased optimism (above and beyond nostalgia and self-esteem; path e). Finally, self-esteem predicted increased optimism (above and beyond nostalgia and social connectedness; path f).

In addition to these direct effects, all but one indirect effects in Figure 1 were significant. Consistent with the possibility that nostalgia-induced social connectedness constitutes a basis for self-esteem, the link between nostalgia and self-esteem was mediated by social connectedness (Path a \times Path d). Regarding the link between nostalgia and optimism, there was a significant total indirect effect of nostalgia on optimism via social connectedness and self-esteem. We partitioned this total

Table 2. Tests of Direct and Indirect Effects in the Mediational Model of Study 4.

Effect	Figure 1 path	Coeff.	SE	95% CI
Direct effects				
Nostalgia ⇒ Social connectedness	a	.515**	.104	[.301, .719]
Nostalgia ⇒ Self-esteem	b	.192*	.091	[.012, .372]
Nostalgia ⇒ Optimism	c	.091	.074	[-.046, .253]
Social connectedness ⇒ Self-esteem	d	.348**	.071	[.197, .494]
Social connectedness ⇒ Optimism	e	-.047	.062	[-.171, .073]
Self-esteem ⇒ Optimism	f	.274**	.071	[.132, .412]
Indirect effect: Nostalgia ⇒ Self-esteem				
Via social connectedness	a × d	.180*	.052	[.093, .296]
Indirect effect: Nostalgia ⇒ Optimism				
Total		.077*	.041	[.006, .164]
Via social connectedness	a × e	-.024	.033	[-.093, .040]
Via self-esteem	b × f	.102*	.037	[.043, .187]
Independent of social connectedness	b × f	.053*	.030	[.009, .129]
Mediated by social connectedness	a × d × f	.049**	.019	[.020, .101]

Note. Coeff. = unstandardized path coefficient; 95% CI = 95% bootstrap confidence interval; N = 127. *p < .05. **p < .001.

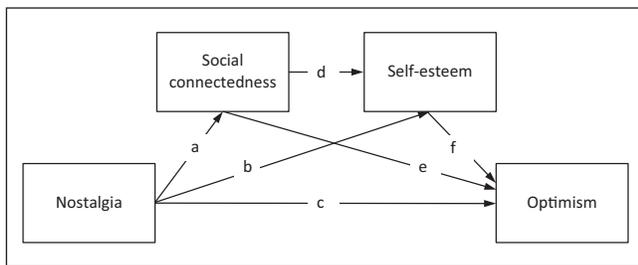


Figure 1. Mediational model tested in Study 4.

indirect effect into a nonsignificant indirect effect via social connectedness (a × e) and a significant indirect effect via self-esteem. In turn, we partitioned the indirect effect via self-esteem into a significant indirect effect that was independent of social connectedness (b × f) and a significant indirect effect that was mediated by social connectedness (a × d × f). The latter indirect effect (a × d × f) provides evidence for an extended causal sequence leading from nostalgia to social connectedness to self-esteem to optimism.

Model fit and alternative models. To assess model fit, we trimmed the nonsignificant direct path from nostalgia to optimism and then calculated fit indices for the resultant nonsaturated model (Figure 1, minus path c). This model provided good fit: $\chi^2(1, N = 127) = 1.51, p = .22$, *Standardized Root Mean Square Residual (SRMSR)* = .03, root mean square error approximation (RMSEA) = .06, *Comparative Fit Index (CFI)* = .99. We also tested alternative models, exploring (a) the position of optimism in the postulated causal sequence and (b) the order of social connectedness and self-esteem (i.e., the postulated mediators). We first

explored the position of optimism. Given that nostalgia was manipulated, optimism cannot precede nostalgia. However, optimism can precede social connectedness and/or self-esteem. Hence, we tested an alternative model in which optimism preceded social connectedness and self-esteem. This model was analogous to the original model (Figure 1, minus path c) but with optimism in the place of social connectedness, social connectedness in the place of self-esteem, and self-esteem in the place of optimism. This model provided marginal fit (most fit indices were adequate but RMSEA exceeded the .10 threshold that is often used as a cut-off for poor fitting models): $\chi^2(1, N = 127) = 2.44, p = .12$, SRMSR = .03, RMSEA = .11, CFI = .98. Within a set of models for the same data, the Akaike Information Criterion (AIC; Akaike, 1974) can be used to compare competing models that need not be nested (smaller is better). For the alternative model, AIC = 28.44. By comparison, for the original model, AIC = 27.51. The fit statistics for this first alternative model are identical to those for a second alternative model, in which optimism follows social connectedness but precedes self-esteem. The reason for this is that the two alternative models differ only in the direction of the link between social connectedness and optimism, but are otherwise identical. Any two models that have the same paths between the same variables will have the same fit, even if some paths are in a different direction. In all, these results indicate that the original model is preferable to alternative models in which optimism precedes social connectedness and/or self-esteem.

Next, we tested a third alternative model, in which the order of social connectedness and self-esteem (i.e., the mediators) was reversed. This third alternative model differs from the original model (Figure 1, minus Path c) only in the direction of the link between social connectedness and

self-esteem. Accordingly, the models have identical fit. However, in this alternative model, social connectedness (the proximal predictor of optimism) did not predict optimism above and beyond nostalgia and self-esteem. We therefore retained the original model, in which social connectedness precedes self-esteem.

Testing the mediational role of PA. Finally, we again explored the possible mediational role of PA. Specifically, we tested the Figure 1 model with PA as an additional mediator (Figure 1, plus a path from nostalgia to optimism via PA). This analysis revealed that the indirect effect of nostalgia on optimism via PA was not significant, $M_{\text{indirect effect}} = -.029$, $SE = .036$, 95% CI = $[-.110, .036]$. Furthermore, the vital extended path from nostalgia to optimism via social connectedness and self-esteem ($a \times d \times f$) remained significant, $M_{\text{indirect effect}} = .058$, $SE = .025$, 95% CI = $[.023, .123]$. In all, we obtained support for a model in which the effect of nostalgia is mediated by social connectedness and concomitant self-esteem, above and beyond PA.

General Discussion

Nostalgia's referent is the past, but its psychological scope may extend into the future. This is an important issue, given the prevalence of nostalgic reverie and the potent influence of optimism on psychological well-being. Prior work, for example, reveals that nostalgia is experienced across cultures (Hepper et al., 2013) and approximately three times a week (Wildschut et al., 2006). Yet prior research has not considered the future orientation of nostalgia, and, more specifically, the relation between nostalgia and optimism. Are there any indications that nostalgic accounts contain traces of optimism? Does nostalgic reverie engender optimism? If so, how?

Summary and Implications of the Findings

An initial foray into these issues, Study 1, demonstrated that nostalgic (compared with ordinary autobiographical) narratives do entail optimism, and, in particular, optimism expressions. Notably, expressions of optimism in the nostalgic narratives occurred above and beyond ratings of PA. Whereas the strength of Study 1 allowed a naturalistic glimpse into displays of optimism in nostalgia writings, this feature also constitutes the study's chief weakness. The study may have contributed a foundational step in understanding the relation between nostalgia and optimism, but it does not permit causal inferences about nostalgia's capacity to elicit optimism. Therefore, the next three studies adopted multiple converging experimental inductions of nostalgia and assessed their effects on optimism.

Study 2 offered evidence of a causal link by illustrating that experimentally induced nostalgia augments optimism. Study 2 also measured PA and found that the nostalgia-induced augmentation of optimism occurred above and

beyond PA. This finding helps to address concerns that it may simply be positive mood stemming from nostalgic (vs. ordinary) events that drives the effect of nostalgia on optimism. Such concerns were also allayed by Studies 3 and 4.

Study 3 replicated the Study 2 findings using exposure to nomothetically relevant nostalgic versus control songs, a validated technique (Sedikides et al., 2013). Moreover, Study 3 illustrated the mediational role of self-esteem: nostalgia raises self-esteem, which in turn heightens optimism. Such findings build on prior work showing that memories of one's past can help to maintain current feelings of self-worth (Peetz & Wilson, 2008; Wilson & Ross, 2003), but extend these insights into demonstrate that the current feelings of self-worth that nostalgia elicits can then contribute to a brighter forecast of the future. In all, Study 3 showcased a distinct pathway through which the past bolsters the present, which then brightens the future.

Study 4 helped to clarify further these processes using exposure to idiographically nostalgic (vs. control) music lyrics, also a validated technique (Routledge et al., 2011). This study established an extended causal sequence that affirmed the status of social connectedness as a basis for self-esteem. Nostalgia fostered social connectedness, which subsequently lifted self-esteem, which then heightened optimism. Put otherwise, the self-esteem lift that participants experienced stemmed from an enhanced sense of social connectedness that was derived from nostalgic reverie; this self-esteem lift, in turns, raised optimism.

Limitations and Broader Considerations

As mentioned above, every nostalgia induction technique we used has been validated (Hepper, Ritchie, et al., 2012; Routledge et al., 2011; Sedikides et al., 2013; Wildschut et al., 2006). Nevertheless, taken alone, the techniques have their weaknesses and may invite alternative interpretation of the findings. For example, in Studies 1 and 2, the nostalgic and ordinary autobiographical narratives may differ beyond the nostalgic qualities we targeted, and may be confounded by other content-specific elements of the narratives. Similar issues may apply to the nostalgic and control songs in Study 3. Such possible confounds, however, are countered by our convergent operations approach (Campbell & Fiske, 1959). This multimethod approach yielded consistent evidence that nostalgia entails and engenders optimism. Finally, in all four studies, nostalgia increased optimism above and beyond PA. Such evidence extends prior research that has begun to establish unique effects of nostalgia, independent of PA (Routledge et al., 2012; Stephan et al., 2012; Turner et al., 2012; Turner, Wildschut, Sedikides, & Gheorghiu, 2013; Zhou, Wildschut, Sedikides, Chen, et al., 2012; Zhou, Wildschut, Sedikides, Shi, et al., 2012).

Given our focus on global optimism, one might wonder whether the findings generalize to specific domains. We anticipate that nostalgia will also infuse optimism on concrete

behavioral domains. To begin with, global optimism is a good proxy of specific, optimism-related behavior (Anderson & Galinsky, 2006). Moreover, nostalgic reverie strengthens intentions to donate time or money to charity (Merchant, Ford, & Rose, 2011; Zhou, Wildschut, Sedikides, Shi, et al., 2012), promotes tangible monetary donations (Zhou, Wildschut, Sedikides, Shi, et al., 2012), and solidifies the proclivity to interact with members of an outgroup (Turner et al., 2012, Turner et al., 2013). Regardless, future studies would do well to examine whether nostalgia prompts optimism in specific domains and also whether it propels relevant action.

Nostalgia boosts a sense of attachment security and perceptions of one's interpersonal competence (Wildschut et al., 2006, 2010), while relational competence increases optimism for relationships (Carnelley & Janoff-Bulman, 1992). As such, nostalgic engagement—through optimism—might contribute to supportive and commitment-focused behaviors in close relationships (Hepper, Wildschut, & Sedikides, 2012). Given that social connectedness was the mechanism by which nostalgia raised self-esteem and thereby optimism, the inherent sociality of nostalgia might also explain optimism and goal-directed behavior in other domains. That is, nostalgia might act as a source of felt security, which, according to attachment theory, allows individuals to form positive expectations, explore their environment confidently and energetically, and approach novel experiences (Carnelley & Ruscher, 2000; Luke, Sedikides, & Carnelley, 2012).

Optimism confers well-being and health benefits (Carver et al., 2010; K. E. Hart & Hittner, 1995). Nostalgia, then, may be one route toward well-being, motivating healthy behaviors and even relationship success. Furthermore, given evidence that nostalgic memories are often recruited in times of loneliness, sadness, boredom, or existential doubt (Routledge et al., 2008; van Tilburg, Igou, & Sedikides, 2013; Wildschut et al., 2006; Zhou et al., 2008), our findings imply that nostalgia, by promoting optimism, could help individuals cope with psychological adversity in a more engaged, less avoidant, and ultimately healthier manner.

Nostalgia can be used, not only to infuse, but also to maintain, optimism. Individuals may be optimistic in the initial stages of task involvement, but they typically become less optimistic as the point of feedback pertaining to task outcomes draws nearer (Sweeny & Krizan, 2013). Nostalgia may counter these temporal declines in optimism and renew the strength of goal pursuit. By so doing, nostalgia could facilitate improvement, if not success (Sedikides & Hepper, 2009), at least in cases where pessimism is unwarranted or maladaptive. Of course, for certain individuals, nostalgia may have undesirable consequences, and this is a pressing topic for future research. Depressed persons, for example, may nostalgically reflect on their past in a way that disconnects it from present or future prospects, and they may even use such reflection to justify a pessimistic outlook (Iyer & Jetten, 2011; Verplanken, 2012). Yet, given the nature and consistency of the present findings, any such exceptions are

overshadowed by nostalgia's capacity to facilitate perceptions of a more positive future.

Finally, our findings offer another example of connectivity between temporal projections. They suggest that the common neural network involved in past and future representations (Brown et al., 2012; Viard et al., 2011) is applied to representations of the self and self-relevant events. Nostalgia may constitute a catalyst for linking one's personal past, present, and future, thus providing a sense of self-continuity (Sedikides et al., 2008, 2013).

Coda

The current research established that nostalgia promotes optimism. This pattern held regardless of the way in which nostalgia was induced, for women and men, across age groups, and in three cultures (American, English, Dutch). The optimistic flame ignited by nostalgia is fuelled by increases in self-esteem, which is founded on social connectedness. Nostalgia is not just an old, sepia-toned photo, locked in a box. Its power is far-reaching and can brighten up the path ahead.

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