

Research Article

Counteracting Loneliness

On the Restorative Function of Nostalgia

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ABSTRACT—*Four studies tested whether nostalgia can counteract reductions in perceived social support caused by loneliness. Loneliness reduced perceptions of social support but increased nostalgia. Nostalgia, in turn, increased perceptions of social support. Thus, loneliness affected perceived social support in two distinct ways. Whereas the direct effect of loneliness was to reduce perceived social support, the indirect effect of loneliness was to increase perceived social support via nostalgia. This restorative function of nostalgia was particularly apparent among resilient persons. Nostalgia is a psychological resource that protects and fosters mental health.*

Loneliness is a psychological state characterized by a set of discomforting emotions and cognitions, such as unhappiness, pessimism, self-blame, and depression (Anderson, Miller, Riger, Dill, & Sedikides, 1994; Cacioppo & Hawkley, 2005). Loneliness is associated with perceived lack of social support (Cacioppo et al., 2006), and with having fewer and less satisfying relationships than desired (Archibald, Bartholomew, & Marx, 1995). Loneliness is a universal experience, as revealed by studies with diverse cultural samples including Chinese Canadians (Goodwin, Cook, & Yung, 2001), Turks and Argentines (Rokach & Bacanlı, 2001), Americans and Canadians (Rokach & Neto, 2000), Portuguese (Neto & Barrios, 2001), and British Asians (Shams, 2001). Loneliness is alleviated by seeking support from social networks (Asher & Paquette, 2003; Bell, 1991), but frequently the solicitation of social support is impeded by individual (e.g., shyness, poor social skills) and situational (e.g., relocation, immigration) factors. We propose that an alternative strategy for coping with loneliness is to augment subjective perceptions of social support by drawing on nostalgic memories.

Nostalgia, a sentimental longing for the past, is a self-relevant and social emotion: The self almost invariably figures as the

protagonist in nostalgic narratives and is almost always surrounded by close others. Along with close others (family members, friends, partners), the most common objects of nostalgic reverie are momentous events (birthdays, vacations) and settings (sunsets, lakes; Wildschut, Sedikides, Arndt, & Routledge, 2006, Studies 1 and 2). Although nostalgia reflects some ambivalence, it is a predominantly positive emotion. On the one hand, the simultaneous expression of happiness and sadness is more commonly found in recollections of nostalgic events, compared with ordinary events, and the coactivation of happiness and sadness occurs more frequently as a result of reflection about nostalgic events than as a result of reflection about ordinary or positive events (Wildschut, Stephan, Sedikides, Routledge, & Arndt, 2008). On the other hand, recollections of nostalgic events include more frequent expressions of happiness, and induce higher levels of happiness, than of sadness (Wildschut et al., 2006, 2008). Moreover, positive and negative elements are often juxtaposed in the form of redemption, a narrative pattern that progresses from a dismal to a triumphant life scene (McAdams, 2001).

Wildschut et al. (2006, Studies 5–7) tested the idea that nostalgic reverie can reignite meaningful relational bonds and reestablish a symbolic connection with significant others (Sedikides, Wildschut, Arndt, & Routledge, 2006; Sedikides, Wildschut, & Baden, 2004). Participants brought to mind either a nostalgic or an ordinary event and then wrote about it. Nostalgic participants scored higher on measures of social bonding, evinced a more secure attachment style, and reported greater interpersonal competence. Nostalgia, then, may increase the accessibility of past relationships (Kumashiro & Sedikides, 2005; Sedikides & Skowronski, 1991) and thus counteract loneliness by magnifying perceived social support.

But does loneliness trigger nostalgia? Wildschut et al. (2006, Study 4) addressed this question. In a laboratory experiment, they induced high versus low loneliness and then measured nostalgia. High-loneliness participants reported being more nostalgic than low-loneliness participants. Thus, there is preliminary support for the idea that loneliness instigates nostalgia.

To summarize, evidence suggests that (a) loneliness leads to reduced perceptions of social support (Cacioppo et al., 2006);

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(b) loneliness increases nostalgia (Wildschut et al., 2006, Study 4); and (c) nostalgia fosters social connectedness (Wildschut et al., 2006, Studies 5–7), thus likely magnifying perceived social support. These findings raise the interesting possibility that loneliness affects perceived social support in two distinct ways. The direct effect of loneliness is to reduce perceived social support: The lonelier one feels, the less social support one perceives. However, loneliness may also have an indirect effect by increasing perceived social support via nostalgia: The lonelier one feels, the more nostalgic one becomes, and the more social support one may then perceive. This pattern of relationships would give rise to a situation of statistical suppression. Such situations can be described in terms of an implicit causal model involving an initial predictor (e.g., loneliness), an intervening variable (e.g., nostalgia), and an outcome (e.g., perceived social support). Suppression occurs when the direct effect of the initial predictor is directionally opposite to its indirect effect via the intervening variable. When the intervening variable is controlled, the direct effect of the initial predictor is strengthened (MacKinnon, Krull, & Lockwood, 2000; Paulhus, Robins, Trzesniewski, & Tracy, 2004).

In four methodologically diverse studies, we examined the possibility that nostalgia counteracts reductions in perceived social support caused by loneliness. We drew from varied participant populations in an Asian (i.e., Chinese) culture. In addition, in Study 4, we examined whether the hypothesized link between loneliness and nostalgia is moderated by a variable that has received ample empirical attention as of late: resilience (Bonanno, 2004).

In Mandarin Chinese, the word for “nostalgia” is *huaijiu*. It is a compound word, consisting of *huai* (“sentimental longing for”) and *jiu* (“the past”). Its meaning is well entrenched in the cultural lexicon. Still, for purposes of internal validity, we always provided participants with a somewhat longer definition of the construct before measuring or inducing nostalgia. We administered validated (or back-translated) Chinese versions of all scales we used. Also, we examined but did not find any gender differences. Finally, we debriefed participants at the end of each testing session.

STUDY 1

Study 1, a preliminary correlational investigation, explored whether loneliness directly decreases perceived social support and indirectly increases perceived social support via nostalgia.

Method

Participants and Procedure

The participants in Study 1 were 758 migrant children (428 females, 318 males, 12 of undeclared gender), ages 9 through 15 ($M = 11.45$, $SD = 1.05$). They were recruited from an elementary school for migrant children in the city of Guangzhou,

China. The children had migrated to this city with their parents from rural areas. They had lived in Guangzhou for an average of 4 years ($SD = 33.71$ months). Participants were seated at separate desks in their classrooms and completed the materials anonymously and at their own pace.

We conducted a pilot study involving 43 elementary-school children ages 8 through 10. All indicated that they understood the meaning of *huaijiu* and that nostalgic experiences were common and familiar to them. In addition, the school teacher confirmed that *huaijiu* was part of the students’ vocabulary. Finally, the children showed good comprehension of the five-item Southampton Nostalgia Scale (SNS; Routledge, Arndt, Sedikides, & Wildschut, 2008) used in the main study. They rated their comprehension of the SNS items on a 7-point scale (1 = *poor comprehension*, 7 = *excellent comprehension*), and each item received an average rating greater than 5.

Materials

We assessed loneliness with the 10-item UCLA Loneliness Scale (Russell, 1996). Items (e.g., “How often do you feel completely alone?”) were rated on a 4-point scale (1 = *never*, 4 = *always*; $\alpha = .86$).

We assessed nostalgia proneness with the SNS. Items (e.g., “How often do you experience nostalgia?”) were rated on a 7-point scale (1 = *very rarely*, 7 = *very frequently*; $\alpha = .70$).

We assessed social support with the 12-item Multidimensional Scale of Perceived Social Support (MSPSS; Zimet, Dahlem, Zimet, & Farley, 1988). Items (e.g., “I can count on my friends when things go wrong”) were rated on a 7-point scale (1 = *very strongly disagree*, 7 = *very strongly agree*; $\alpha = .93$).

Results and Discussion

Results are presented in the top panel of Figure 1. Zero-order correlations revealed that (a) loneliness was negatively associated with perceived social support, (b) loneliness was positively associated with nostalgia, and (c) nostalgia was positively associated with perceived social support. The results are consistent with the possibility that whereas the direct effect of loneliness is to decrease perceived social support, the indirect effect of loneliness is to increase perceived social support via nostalgia. This implies that loneliness should more strongly predict reductions in perceived social support after nostalgia has been statistically controlled (Paulhus et al., 2004). Indeed, when we regressed perceived social support onto both loneliness and nostalgia, we found a unique negative association between loneliness and perceived social support, and a unique positive association between nostalgia and perceived social support (Fig. 1).

A z' test¹ revealed that the negative association between loneliness and perceived social support became significantly

¹The critical value ($\alpha = .05$) for this test is 0.97 (MacKinnon, Lockwood, Hoffman, West, & Sheets, 2002).

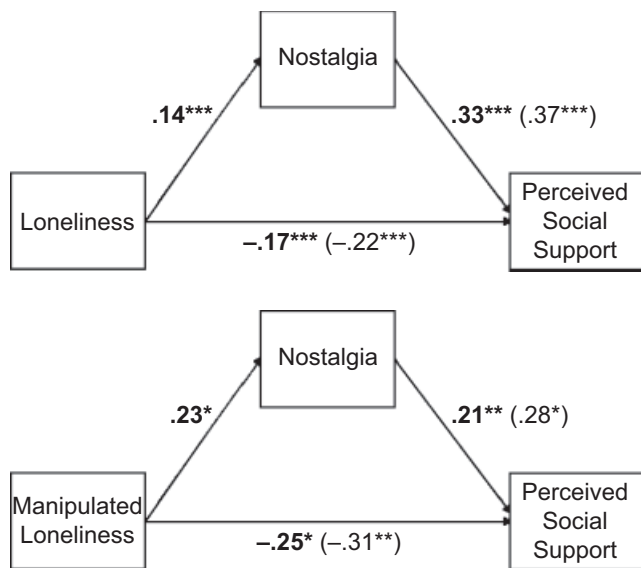


Fig. 1. Associations among loneliness, nostalgia, and perceived social support in Study 1 (top panel; $N = 758$) and Study 2 (bottom panel; $N = 84$). Coefficients in boldface are zero-order correlations. Coefficients in parentheses are standardized regression coefficients. Asterisks indicate values significantly different from zero, * $p < .05$, ** $p < .01$, *** $p < .001$.

more negative after nostalgia was controlled ($-.22$ vs. $-.17$), $z' = 3.40$, $p < .001$. This also means that the positive indirect effect of loneliness on perceived social support via nostalgia was significant. In sum, lonely people, although they perceive little social support, are inclined to nostalgic engagement. Such nostalgic engagement, in turn, increases their perceptions of social support.

STUDY 2

Statistical suppression has been viewed with skepticism, partly because of its alleged elusiveness (Wiggins, 1983). The first objective of Study 2 was to replicate the suppression situation documented in Study 1. In addition, because the correlational design of Study 1 did not allow for a causal ordering of loneliness, nostalgia, and perceived social support, the second objective of Study 2 was to test experimentally the causal effect of loneliness on nostalgia (the postulated intervening variable) and perceived social support (the postulated outcome). The third objective of this study was to examine the generality of the findings in Study 1 by testing a sample of university students.

Method

Participants

The participants in Study 2 were 84 undergraduate students (46 females, 38 males) from Fudan University, Shanghai, China. Their ages ranged from 18 to 23 ($M = 20.93$, $SD = 0.79$). Each participant was randomly assigned to one of two loneliness conditions (high vs. low).

Materials and Procedure

Participants were tested individually. We induced loneliness with a manipulation introduced by Wildschut et al. (2006, Study 4). Participants completed the ostensibly valid and reliable Southampton Loneliness Scale, which consisted of 10 items drawn from the UCLA Loneliness Scale (Russell, Peplau, & Cutrona, 1980). In the high-loneliness condition, items were phrased so as to elicit agreement (e.g., “I sometimes feel alone”). In the low-loneliness condition, items were phrased so as to elicit disagreement (e.g., “I always feel alone”). As intended, participants in the high-loneliness condition ($M = 6.20$) agreed with more items than participants in the low-loneliness condition ($M = 2.00$), $F(1, 82) = 149.26$, $p < .001$, $r = .80$. Subsequently, participants received bogus feedback. Those in the high-loneliness condition learned that their scores were in the 67th percentile of the loneliness distribution and that they were “well above average on loneliness” compared with other Fudan University undergraduates. Those in the low-loneliness condition learned that they were in the 12th percentile and were “very low on loneliness” compared with fellow undergraduates. To strengthen the manipulation, we instructed participants to list reasons for their loneliness score.

Next, participants completed a two-item manipulation check (“I am feeling lonely right now” and “At this moment, I feel quite lonely”; 1 = *strongly disagree*, 7 = *strongly agree*). We combined responses to the two items ($r = .68$, $p < .001$) to form a single index. Participants in the high-loneliness condition ($M = 5.77$) reported feeling lonelier than those in the low-loneliness condition ($M = 4.90$), $F(1, 82) = 13.31$, $p < .001$, $r = .37$.

Participants then completed measures of nostalgia (SNS; $\alpha = .71$) and perceived social support (MSPSS; $\alpha = .87$). Each item was prefaced with the stem “Right now” so that the scales would assess state nostalgia and perceived social support.

Results and Discussion

Results are presented in the bottom panel of Figure 1. In a cross-cultural replication of previous findings (Wildschut et al., 2006, Study 4), loneliness increased nostalgia. Participants in the high-loneliness condition ($M = 4.86$) felt more nostalgic than those in the low-loneliness condition ($M = 4.16$), $F(1, 82) = 4.76$, $p < .05$, $r = .23$. The study also conceptually replicated our findings in Study 1, as loneliness decreased perceived social support. Participants in the high-loneliness condition ($M = 4.63$) reported lower social support than those in the low-loneliness condition ($M = 5.34$), $F(1, 82) = 5.31$, $p < .02$, $r = -.25$. Finally, as in Study 1, there was a significant positive zero-order correlation between nostalgia and perceived social support (see Fig. 1).

We replicated the suppression situation documented in Study 1. Whereas the direct effect of loneliness was to reduce social support, its indirect effect was to increase social support via nostalgia. When we regressed perceived social support onto

both loneliness condition (contrast-coded) and nostalgia, we found a unique negative effect of the loneliness manipulation on perceived social support, and a unique positive association between nostalgia and perceived social support (see Fig. 1). A z' test revealed that the effect of the loneliness manipulation on perceived social support became significantly more negative when nostalgia was controlled ($-.31$ vs. $-.25$), $z' = 1.70$, $p < .05$. In sum, lonely participants perceived little social support, but they also felt nostalgic. In turn, nostalgic reverie augmented their perceptions of social support.

STUDY 3

Study 2 provided compelling evidence for directionally opposite causal effects of loneliness on nostalgia and perceived social support. It was still unclear, however, whether nostalgia exerts a causal effect on perceived social support. The key objective of Study 3 was to clarify whether nostalgia increases perceived social support.

Method

Participants

Participants were 66 Fudan University undergraduates (36 males, 30 females), ages 18 through 24 ($M = 21.02$, $SD = 1.27$). They were randomly assigned to conditions (nostalgia vs. control).

Materials and Procedures

We induced nostalgia using a manipulation introduced by Wildschut et al. (2006, Study 5). Participants in the nostalgia condition 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.” Participants in the control condition brought to mind “an ordinary event.” Participants then listed four event-relevant keywords and reflected briefly about the event and how it made them feel. Next, they completed a two-item manipulation check (“Right now, I am feeling quite nostalgic” and “Right now, I am having nostalgic feelings”; 1 = *strongly disagree*, 7 = *strongly agree*). We combined responses to the items ($r = .74$, $p < .001$) to form a single index. As intended, participants in the nostalgia condition ($M = 4.89$) reported feeling more nostalgic than those in the control condition ($M = 4.22$), $F(1, 64) = 4.52$, $p = .037$, $r = .26$.

Subsequently, participants completed two measures of perceived social support. One was the MSPSS ($\alpha = .86$). The other involved estimating the number of friends who would volunteer in an experiment to help participants receive additional credit.

Results and Discussion

Nostalgia increased perceived social support. On the MSPSS, participants in the nostalgia condition reported more perceived social support ($M = 5.39$) than those in the control condition

($M = 4.87$), $F(1, 64) = 8.04$, $p = .006$, $r = .33$. Furthermore, participants in the nostalgia condition ($M = 8.94$) listed a greater number of friends than those in the control condition ($M = 7.58$), $F(1, 64) = 2.86$, $p = .096$, $r = .21$. The two measures of perceived social support were positively correlated, $r = .55$, $p < .001$. These results confirm that nostalgia causes increases in perceptions of social support.

STUDY 4

Through correlational and experimental methods, and in samples of children and undergraduate students, we had established the restorative function of nostalgia in relation to loneliness. In particular, Studies 1 through 3 revealed that (a) loneliness decreases perceptions of social support, (b) loneliness increases nostalgia, and (c) nostalgia, in turn, increases perceptions of social support. This pattern of relationships is tantamount to statistical suppression: Whereas loneliness directly decreases perceived social support, it indirectly increases perceived social support via nostalgia. The objective of Study 4 was to test the generality of these findings. Would they be replicated in a sample of community-drawn adults and with a more comprehensive assessment of nostalgia? More important, are the effects of loneliness moderated by personality variables? We focused, in particular, on resilience.

Resilience is defined as the ability to recover from (or to resist being affected by) shock, insult, or disturbance (Garmezy, 1991). Resilient individuals exposed to traumatic events or unfavorable life circumstances (ranging from a terrorist attack to divorce, death of a spouse, and poverty) are characterized, after an initial period of distress, by a “stable trajectory of healthy functioning across time” (Bonanno, 2005, p. 136). Such individuals are then able to carry out effectively their personal and social responsibilities, to experience positive emotions, and to engage in creative activities (Bonanno, 2004). Resilient individuals capitalize on available personal and social resources to self-regulate effectively.

Study 4 assessed loneliness, resilience, nostalgia, and perceived social support in a sample of factory workers. We expected to replicate previous findings. Specifically, we expected the association between loneliness and perceived social support to become significantly more negative when nostalgia was statistically controlled. We also expected resilience to moderate this suppression pattern. Given their resourcefulness, resilient individuals should be particularly apt to recruit nostalgia in response to loneliness.

Method

Participants and Procedure

Participants were 193 factory workers (121 females, 53 males, 19 of undeclared gender) in a luggage factory in the city of Dongguan, China. Their mean age was 25.44 ($SD = 6.84$).

Measures

We measured loneliness with the UCLA Loneliness Scale ($\alpha = .74$). We measured resilience with the 15-item form of the Resilience Scale (RS; Wagnild & Young, 1993). Items on the RS (e.g., “When I’m in a difficult situation, I can usually find my way out of it”) were rated on a 7-point scale (1 = *strongly disagree*, 7 = *strongly agree*; $\alpha = .81$).

We measured nostalgia with two scales. The first was Batcho’s (1995) Nostalgia Inventory (NI), on which participants rate (1 = *not at all*, 7 = *very much*) the extent to which they miss 20 aspects of their past (e.g., family, places, friends, childhood toys; $\alpha = .80$). The NI was used successfully by Wildschut et al. (2006, Study 3). Our second measure of nostalgia was the SNS ($\alpha = .74$). We standardized (calculated *z* scores) and then averaged scores on the two nostalgia scales ($r = .41, p < .001$) to form a composite measure. The relatively low correlation between the two scales is not surprising, given that the NI assesses longing for concrete objects, whereas the SNS assesses abstract facets of nostalgia, such as frequency and personal relevance. Yet the two scales produced identical results when considered alone. Finally, we measured perceived social support with the MSPSS ($\alpha = .77$).

Results and Discussion

First, we examined whether prior findings were replicated (see Fig. 2). We again found evidence that whereas the direct effect of loneliness is to reduce perceived social support, its indirect effect is to increase perceived social support via nostalgia. As in Studies 1 and 2, the association between loneliness and perceived social support became significantly more negative when nostalgia was statistically controlled ($-.26$ vs. $-.15$), $z' = 2.60, p < .01$. This also means that the positive indirect effect of loneliness on perceived social support via nostalgia was significant.

Next, we turned to the role of resilience. Following guidelines for testing moderation in the context of intervening-variable models (Muller, Judd, & Yzerbyt, 2005; Preacher, Rucker, & Hayes, 2007), we took the preliminary step of testing whether

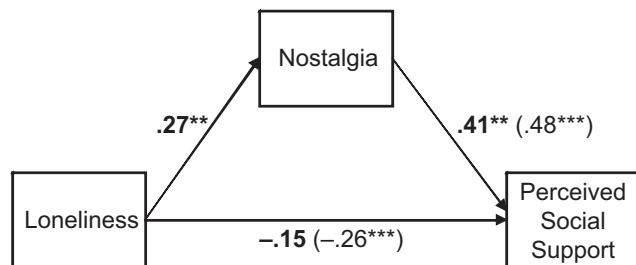


Fig. 2. Associations among loneliness, nostalgia, and perceived social support in Study 4 ($N = 193$). Coefficients in boldface are zero-order correlations. Coefficients in parentheses are standardized regression coefficients. Asterisks indicate values significantly different from zero, $**p < .01$, $***p < .001$.

resilience moderated the association between loneliness and perceived social support. A nonsignificant Loneliness \times Resilience interaction, $\beta = .07, t = 0.87, p < .39$, indicated that resilience did not moderate this association. We then tested whether resilience moderated the association between loneliness and nostalgia. We regressed nostalgia onto loneliness, resilience, and the Loneliness \times Resilience interaction. A significant Loneliness \times Resilience interaction, $\beta = .20, t = 2.20, p < .05$, indicated that resilience moderated the association between loneliness and nostalgia (see Fig. 3). The slope for loneliness at high resilience ($+1 SD$) was strong and positive, $\beta = .47, t = 3.89, p < .01$, whereas the slope for loneliness at low resilience ($-1 SD$) was nonsignificant and approximately zero, $\beta = .09, t = 0.63, p = .53$. Loneliness was associated with nostalgia among individuals high (but not low) in resilience. These results suggest that it is highly resilient individuals who are most likely to recruit nostalgia in response to loneliness.

Finally, we examined whether resilience moderated the association between nostalgia and perceived social support. We regressed perceived social support onto loneliness, nostalgia, resilience, the Loneliness \times Resilience interaction, and the Nostalgia \times Resilience interaction (Muller et al., 2005; Preacher et al., 2007). The Nostalgia \times Resilience interaction was not significant, $\beta = -.10, t = -1.14, p < .26$, which indicates that resilience did not moderate the association between nostalgia and perceived social support. In all, the data are consistent with the idea that both resilient and nonresilient people derive perceived social support from nostalgia, but highly resilient people are more likely to recruit nostalgia when lonely. Resilient people have incorporated nostalgia in their arsenal of coping mechanisms.

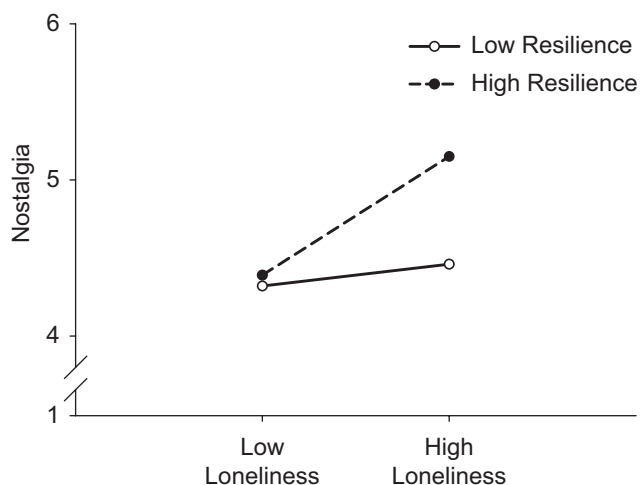


Fig. 3. Level of nostalgia as a function of loneliness and resilience. Plotted values are predicted means calculated at 1 standard deviation above and below the mean of loneliness, and at 1 standard deviation above and below the mean of resilience.

GENERAL DISCUSSION

Because of either dispositional (e.g., introversion, shyness) or situational (e.g., new occupation or residence) factors, individuals often find it difficult to cope with loneliness directly, that is, by strengthening their social support by forming social networks or expanding existing ones. We wondered whether nostalgia constitutes an alternative coping strategy. Might nostalgia restore social connectedness by increasing subjective perceptions of social support? Is this restorative function of nostalgia particularly potent among resilient individuals? We conducted four studies to find out. Some were correlational, and others were experimental. One tested children, and the others tested university students or factory workers. Furthermore, Studies 2 and 3 replicated in Chinese samples experimental findings initially obtained in British samples (Wildschut et al., 2006).

Several interesting findings emerged. First, loneliness is associated with, or causes, decreased perceived social support (Studies 1, 2, and 4). Second, loneliness is associated with, or causes, increased nostalgia (Studies 1, 2, and 4). Third, nostalgia is associated with, or causes, increased perceived social support (Studies 1–4). This pattern of results amounts to a suppression situation: Whereas loneliness directly decreased perceived social support, it indirectly increased perceived social support via nostalgia. Nostalgia magnifies perceptions of social support and, in so doing, thwarts the effect of loneliness. Nostalgia restores an individual's social connectedness. Fourth, and finally, the association between loneliness and nostalgia is particularly pronounced among highly resilient individuals. It is these individuals who, when lonely, report high levels of nostalgia.

Our findings have implications not only for social and personality psychology, but also for clinical, health, and developmental psychology. From a social psychology perspective, they raise questions such as, what are the consequences of heightened perceptions of social support among lonely (and resilient) individuals? Might one consequence be reduced death-thought accessibility (Routledge et al., 2008) and, by implication, lower existential anxiety? Also, might nostalgia be evoked as a coping strategy in the face of social exclusion (Williams, 2001) or acculturative stress (Sedikides, Wildschut, Routledge, Arndt, & Zhou, in press)? From a personality psychology perspective, our findings raise questions such as, what are some other relevant individual difference variables worth investigating? We would single out hardiness (Kobasa, Maddi, & Kahn, 1982), positive emotions (Fredrickson & Losada, 2005), and self-compassion (Leary, Tate, Adams, Allen, & Hancock, 2007). We expect that people with greater hardiness, positive emotionality, and self-compassion would experience higher levels of nostalgia when lonely, and that there would be accompanying beneficial consequences. From a clinical psychology perspective, nostalgia may be considered a tool in cognitive therapy (Salmela-Aro & Nurmi, 1996). Individuals could be trained to benefit from the

restorative function of nostalgia when actual social support is lacking or is perceived as lacking. From a health psychology perspective, nostalgia might serve a protective role for physical health, especially in the presence of chronic distress (i.e., loneliness), in the same manner as personal control, sense of meaning, and optimism do (Taylor, Kemeny, Reed, Bower, & Gruenewald, 2000). Finally, from a developmental psychology perspective, nostalgia might be implemented as a technique to help children, adolescents, and the elderly cope with loneliness.

This research documents that nostalgia is a psychological resource that protects and fosters mental health. Nostalgia strengthens social connectedness and belongingness, partially ameliorating the harmful repercussions of loneliness. This research constitutes an initial step toward establishing nostalgia as a potent coping mechanism in situations of self-threat and social threat. The past, when appropriately harnessed, can strengthen psychological resistance to the vicissitudes of life.

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