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# Nostalgia Weakens the Desire for Money

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Nostalgia has a strong presence in the marketing of goods and services. The current research asked whether its effectiveness is driven by its weakening of the desire for money. Six experiments demonstrated that feeling nostalgic decreased people's desire for money. Using multiple operationalizations of desire for money, nostalgia (vs. neutral) condition participants were willing to pay more for products (experiment 1), parted with more money but not more time (experiment 2), valued money less (experiments 3 and 4), were willing to put less effort into obtaining money (experiment 5), and drew smaller coins (experiment 6). Process evidence indicated that nostalgia's weakening of the desire for money was due to its capacity to foster social connectedness (experiments 5 and 6). Implications for price sensitivity, willingness to pay, consumer spending, and donation behavior are discussed. Nostalgia may be so commonly used in marketing because it encourages consumers to part with their money.

Nostalgia is commonplace in marketing (Holak and Havlena 1992; Stern 1992). In 2012 alone, nostalgia was cited as a top trend in products such as toys (Dickler 2012), food (Faulder 2012), and even Oscar-winning movies (Cieply and Barnes 2012). Nostalgic themes also have been particularly pervasive during recent times of economic crisis (Elliot 2009). In 2009, PepsiCo launched nostalgic versions of their popular sodas Pepsi and Mountain Dew. The so-called throwback beverages, based on original formulas and packaging, were meant to evoke sentiments of the 1960s and 1970s (Elliot 2009). General Mills introduced retro packaging for their Big 5 cereals (Trix, Lucky Charms,

Cheerios, Cinnamon Toast Crunch, and Honey Nut Cheerios) with the aim of inducing wistfulness for the past. An Internet promotion for indie band Arcade Fire (<http://www.thewildernessdowntown.com>) let consumers enter the address of their childhood home. This interactive promotion shows actual aerial footage of consumers' childhood neighborhoods and homes, evoking nostalgic memories of a personally experienced past.

We proposed that one reason for nostalgia's prominence in marketing is due to its capacity to weaken consumers' grasp on their money. We tested the hypothesis that feeling nostalgic reduces desire for money, defined as the motivation to have, hold onto, and obtain money.

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## NOSTALGIA FOSTERS SOCIAL CONNECTEDNESS

### Nostalgia Defined

There are two main conceptualizations of nostalgia in the literature—one concerning objects that can inspire it, the other focusing on personal experiences and outcomes of it. Our work focused on the latter.

One conceptualization describes nostalgia as a preference for things from the past (Holbrook 1993; Holbrook and Schindler 1989, 1991, 1994, 2003; Schindler and Holbrook 2003; Seehusen et al. 2013). For example, Holbrook and Schindler (1991, p. 330) defined nostalgia as “a preference (general liking, positive attitude, or favorable affect) toward objects (people, places, or things) that were more common (popular, fashionable, or widely circulated) when one was

younger (in early adulthood, in adolescence, in childhood, or even before birth).” Nostalgia in this framework can occur even if one has not had personal experience with the relevant object or event. Research stemming from this conceptualization has been primarily concerned with the antecedents of nostalgic preferences.

The other conceptualization describes nostalgia as an emotion that arises from reflection on one’s past (Batcho 1995; Hepper et al. 2012; Holak and Havlena 1998; Sedikides et al. 2008; Sedikides, Wildschut, and Baden 2004; Stephan et al. 2012). Nostalgia mostly entails the recollection of a fond, meaningful memory (e.g., childhood, close relationship, momentous occasion). Individuals often reflect on the memory through rose-colored glasses and may miss that time or person (Hepper et al. 2012). Individuals are likely to feel sentimental, tender, or happy, and often with a tinge of longing.

Nostalgia is distinct from positive memories. Nostalgic recollections comprise two themes: a past event (construed in abstract terms) and the event’s relevance to the present experience (construed in concrete terms), whereas positive autobiographical recollections comprise only the past event (Stephan et al. 2012). Also, nostalgia is distinct from positive affect. To be sure, the content of nostalgic narratives is more positive than negative (Wildschut et al. 2006), and nostalgia typically but not always increases positive affect (Hepper et al. 2012; Stephan et al. 2012; Verplanken 2012; Wildschut et al. 2006, 2010; Zhou et al. 2012). Nonetheless, nostalgia is most often characterized by a primarily positive emotion tinged with bittersweet feelings (Hepper et al. 2012; Holak and Havlena 1992). While nostalgia most often evokes positive feelings, there are empirical demonstrations of the independent effects of nostalgia beyond those of positive affect (Cheung et al. 2013; Routledge et al. 2012; Stephan et al. 2012; Turner, Wildschut, and Sedikides 2012; Turner et al. 2013; Zhou et al. 2012). In our research, we examined the effect of nostalgia-evoked social connectedness on the desire for money.

### Nostalgia and Social Connectedness: The Importance of Social Ties

Memories elicited by nostalgia largely feature the self surrounded by close others (Holak and Havlena 1998; Vess et al. 2012; Wildschut et al. 2006). Thus, significant others constitute a key component of the nostalgia experience. For example, nostalgic narratives contain more first-person plural pronouns and social words (e.g., “mother,” “friend”) than other autobiographical narratives (Hepper, Wildschut, et al. 2014). In addition, individuals who are chronically likely to feel nostalgic express a stronger preference for activities and song lyrics in which social relationships are central (Batcho 1998).

Moreover, nostalgia fosters social connectedness. For example, participants who write about a nostalgic event report feeling loved and protected more so than those who write about other autobiographical events (Juhl et al. 2010; Wild-

schut et al. 2006). Also, nostalgia counteracts or reduces loneliness by instilling social connectedness (Zhou et al. 2008). Finally, nostalgia increases prosocial behavior (e.g., helping, volunteering, donating to charity; Stephan et al. 2014; Zhou et al. 2012) while decreasing antisocial behavior (e.g., stereotyping; Turner et al. 2013).

Research on the need to belong (Baumeister and Leary 1995) is a further demonstration of the nostalgia–social connectedness link. The need to belong predicts the frequency with which one experiences nostalgia (Seehusen et al. 2013). Also, activating the need to belong increases participants’ propensity to become nostalgic. For example, participants who are told that they will end up alone in the future (rather than have rewarding relationships throughout life) report higher levels of state nostalgia (Seehusen et al. 2013).

In summary, social connectedness is a key consequence, and lack of it is a key antecedent, of nostalgia. On the one hand, when people feel nostalgic, social connectedness rises; on the other hand, when people feel socially disconnected, desire for nostalgia rises. The premise that nostalgia fosters social connectedness formed the basis for our novel hypothesis that nostalgia will diminish the desire for money. We predicted for this latter pattern to occur because social connectedness offsets the desire for money.

## SOCIAL CONNECTEDNESS AND MONEY AS INTERCHANGEABLE RESOURCES

Money is a store of value, fungible, and an instrument for the satisfaction of wants and needs—the latter of which is most salient to people’s everyday experience (Lea and Webley 2006). Money can procure basic necessities, such as food and shelter, as well as interpersonal resources (e.g., <http://www.rentafriend.com>, prostitution). A fundamental reason why people value money and are motivated to obtain and keep it is because having more money means having more and better chances to satisfy their needs.

Aside from its practical uses, small and subtle cues of money bear on social interactions. People who are reminded of money behave as if they can do just fine without others. For example, participants reminded of the concept of money, compared to those reminded of nonmoney concepts, prefer to work on tasks alone and are less likely to contribute money to a charity (Vohs et al. 2006, 2008).

The idea that money diminishes social strivings has been taken further in research demonstrating money’s influence on the subjective experience of pain. Zhou, Vohs, and Baumeister (2009) found that compared to those whose initial task was to count a stack of paper, participants who counted a stack of hard currency reported lower distress following a social exclusion experience. Not only was social distress lower among the ostracized participants, it was also statistically equivalent to feelings reported by participants who had been socially included. Furthermore, participants reported feeling stronger after being reminded of money, and degree of strength was negatively associated with degree of distress. Thus, individuals reminded of money acquired a

sense of strength and became insensitive about social exclusion. These findings suggest that the psychological state aroused by money entails little need or desire for social connection.

### TOPPING UP AND SLACKING OFF

Does the evidence support the notion that social connectedness and being reminded of money sate similar needs? It suggests as much. According to a general motivational principle (Carver and Scheier 2004), when people receive signals that they are not reaching their goals, they work harder. In contrast, when they detect that they have reached or will easily reach their goal, they “coast.” The function of coasting is to allocate precious time, energy, and effort judiciously among other goals. Returning to the current context, if money is desirable because it can be readily exchanged for wants and needs from society and aid from others can do the same, then desire for money and social connection share a valuable function (Vohs, Lasaleta, and Chaplin 2014). From a general motivational standpoint (Carver and Scheier 2004), then, signals that one has enough of one of these resources (money or social connectedness) should allow people to back off from expending extra efforts or prioritizing the other.

Recent evidence supports such a view. Vohs et al. (2014) found that participants induced to feel socially supported ranked financial success and business skills as less important than participants in a neutral state. In another experiment, they demonstrated that children who kept a social support journal donated more money than those who kept a neutral daily activity journal. The current work takes those findings several steps further by asking whether the presence of nostalgia in the marketplace serves to sate needs to be cared for and supported by others, thereby quelling the need for money.

Given that the experience of nostalgia can be tinged with longing for past relationships (Hepper et al. 2012), one could posit alternative predictions. If nostalgia evokes the lack of social connection, then it could be the case that people would want money more than otherwise, again as a sign of their interchangeability as resources. It is also possible that nostalgia-evoked loss of social connection increases acceptance of other types of losses, including and beyond that of money. Our favored prediction though, is that nostalgia decreases desire for money by fostering social connectedness. It draws from and builds on evidence demonstrating that nostalgia creates a surge, rather than dearth, of social connectedness (e.g., Wildschut et al. 2006, 2010).

### THE PRESENT RESEARCH

Six experiments tested the hypothesis that nostalgic participants will desire money less than their neutral counterparts. We predicted that nostalgic, relative to neutral, participants would be willing to spend more money on products (experiment 1), give away more money but not more time (experiment 2), report that money is relatively unimportant

(experiment 3) and less desirable (experiment 4), be less willing to exert effort to obtain money (experiment 5), and draw smaller coins (experiment 6). In addition, we predicted that the relation between nostalgia and money would be mediated by increased social connectedness (experiments 5 and 6).

### EXPERIMENT 1: WILLINGNESS TO PAY

Experiment 1 was an initial test of the hypothesis that individuals who feel nostalgic would desire money less than those who do not. We induced nostalgia using copy on print advertisements. In the nostalgia condition, participants viewed advertisements that focused on nostalgic memories from their past, whereas in the neutral condition participants viewed advertisements that focused on making new memories. Hence, both conditions reminded participants of their own memories, with the focus on memories from a personally experienced past in the nostalgia condition versus laying down new memories in the neutral condition.

We operationalized desire for money as willingness to pay for products. Our rationale was that consumers who find money less desirable will be less interested in holding onto it compared to those who find money more desirable. We predicted that after viewing an advertisement that cued nostalgia, versus an advertisement that cued the idea of making new memories, participants would indicate a higher willingness to pay for products.

### Method

*Participants and Design.* Seventy undergraduates at the University of Minnesota took part in exchange for partial course credit. One participant did not complete the experiment, which left usable data for 69 participants (38 females;  $M_{\text{age}} = 21.58$  years,  $SD = 1.04$ ). This study used a two-cell design with nostalgia versus neutral conditions as predictors of willingness to pay.

*Procedures.* Participants arrived at the laboratory individually and learned that they would take part in two short and unrelated studies. The first involved advertisement perusal, the second product evaluation.

For the first task, participants received a category information brief (CIB) packet, which was described as part of a catalogue that a sales broker would show potential retailers (Dahl, Sengupta, and Vohs 2009). Each CIB packet contained two advertisements, of which the nostalgia versus neutral advertisement was second. In both conditions the advertisement promoted the same product, used the same (Kodak) branding, and displayed the same photo—but contained a different copy (see the appendix). In the nostalgia condition, the copy read “*Remember special occasions with others from your past. . . . Take a moment to cherish your childhood memories.*” In the neutral condition, the copy read “*A special occasion with others. . . . Think about making new memories starting today and well into your future.*” Participants perused each advertisement for 30 seconds, after

which they evaluated it on three attributes: attractive, amusing, and likeable (1 = not at all, 9 = extremely;  $\alpha = .86$ ). Research has demonstrated that thinking about past and future memories involves similar cognitive processes and neural structures (Addis, Wong, and Schacter 2007; Berntsen and Bohn 2010; Bohn and Berntsen 2010), and a similar manipulation has been validated in previous nostalgia research (Routledge et al. 2012; Zhou et al. 2012). The considerable overlap between the processes elicited by past versus future memory generation provides a strong test of our hypothesis that there is a unique component to nostalgia which will lead participants to desire comparatively less money.

We conducted two pretests to check the effectiveness of the manipulation. One pretest ( $N = 46$ ; 25 females, three undeclared) confirmed that the manipulation altered nostalgic feelings. After viewing the nostalgia or neutral advertisement, participants responded to three items: "Right now, I am feeling quite nostalgic"; "Right now, I am having nostalgic feelings"; and "I feel nostalgic at the moment" (1 = strongly disagree, 7 = strongly agree; Wildschut et al. 2006). We averaged these three items into a single nostalgia index ( $\alpha = .97$ ). As intended, participants who viewed the nostalgic advertisement reported experiencing more nostalgia than those who viewed the neutral advertisement ( $M_{\text{nostalgia}} = 4.24$ ,  $SD = 1.70$  vs.  $M_{\text{neutral}} = 3.15$ ,  $SD = 1.65$ ;  $t(44) = 4.82$ ,  $p < .05$ ).

We carried out a second pretest to verify that the nostalgia manipulation fostered social connectedness. Past work has repeatedly demonstrated this effect (Wildschut et al. 2006, 2010; Stephan et al. 2014; Zhou et al. 2008), but it was important to replicate the effect in a sample of participants drawn from the same population as that of the main experiment. We randomly assigned participants ( $N = 66$ ) to view either the nostalgia or neutral advertisement. Next, participants indicated the degree to which they felt socially supported by completing the Multidimensional Scale of Perceived Social Support (Zimet et al. 1988). This 12-item scale consists of three subscales: feeling supported by family, friends, and significant others. Items include "I get the emotional help and support I need from my family (family subscale)"; "My friends really try to help me (friends subscale)"; and "There is a special person in my life who cares about my feelings (significant other scale)" (1 = very strongly disagree, 7 = very strongly agree). We combined these items to form a social connectedness index ( $\alpha = .92$ ). As a confirmation of the manipulation, participants in the nostalgia condition expressed stronger social connectedness than those in the neutral condition ( $M_{\text{nostalgia}} = 6.09$ ,  $SD = .76$  vs.  $M_{\text{neutral}} = 5.43$ ,  $SD = 1.17$ ;  $t(64) = 2.61$ ,  $p < .05$ ).

Next, participants completed the dependent measure, a product evaluation task. They were presented with a booklet showing names and pictures of 24 products and reported their willingness to pay for each. The products ranged from high-end (e.g., house) to midrange (e.g., sweatshirt) to low-end (e.g., 1 liter bottle of Coke). Products included durables

(e.g., umbrella, motorcycle) and nondurables (e.g., three-course meal, book reading).

## Results

*Advertisement Ratings.* We tested whether the nostalgia versus neutral advertisements varied in their appeal. We combined the liking, amusement, and attractiveness ratings to form a favorability index, which we subjected to a  $t$ -test with nostalgia condition as the predictor. As expected, the advertisements were viewed as equally favorable across conditions ( $t < .05$ , NS). Hence, differences in the advertisements' favorability could not have been a key component of participants' willingness to pay.

*Willingness to Pay.* This experiment tested the hypothesis that participants who had viewed an advertisement prompting them to think about nostalgic, as opposed to new, memories would offer higher prices in a willingness-to-pay task. Given that average willingness to pay varied as a function of product from \$1.67 (1 liter bottle of Coke) to \$292,671.43 (house), we standardized willingness-to-pay scores before subjecting them to statistical analyses (Sussman and Alter 2012). We conducted a 2 (advertisement: nostalgic vs. neutral)  $\times$  24 (product type) mixed-measures analysis of variance (ANOVA), with memory type as a between-subjects factor and product type as a within-subjects factor predicting willingness to pay. As expected, this analysis revealed a main effect of memory condition ( $F(1, 67) = 4.87$ ,  $p < .05$ ). Willingness to pay for participants in the nostalgic memory condition was higher than in the neutral condition ( $M_{\text{nostalgia}} = .10$ ,  $SD = .38$  vs.  $M_{\text{neutral}} = -.11$ ,  $SD = .39$ ). There was no effect of product on willingness to pay ( $F < .03$ , NS), nor was there an interaction between product and advertisement condition ( $F < 1.10$ , NS).

## Discussion

Experiment 1 demonstrated that participants who viewed an advertisement that prompted them to think about nostalgic memories, compared to those who viewed an advertisement that prompted them to think about making new memories, were willing to pay more for products. Although consistent with our hypothesis, this effect invites two alternative explanations. First, it is possible that nostalgia decreased the valuation of a variety of resources, not just money. In addition, it is plausible that nostalgia increased valuation of products, which was reflected in higher willingness-to-pay scores. Experiment 2 addressed these alternative explanations.

### EXPERIMENT 2: DICTATOR GAME

The objective of experiment 2 was to test whether nostalgia influences desire for money by gaining converging evidence from methods and measures different than those used in experiment 1. Experiment 2 used the dictator game (Güth, Schmittberger, and Schwarze 1982). This involves a

one-shot exchange in which a participant decides unilaterally how much money (if any) to give to another player with the rest of the money remaining with the participant. This exchange takes place outside of the product realm, which permitted us to address the alternative explanation from experiment 1 that nostalgia increased valuation of products thereby increasing willingness-to-pay scores. We reasoned that, as desire for money decreases, amount of money given away would increase.

We endowed participants with one of two resources: time or money. Introducing time as a factor in this experiment allowed us to test the specificity of the effect and rule out the alternative explanation that nostalgia renders all types of resources less desirable. We chose time as the alternate resource, because time and money are both valuable and allocated by consumers on a daily basis (Aaker, Rudd, and Mogilner 2011). Accumulating evidence also has shown the divergent effects of thinking about, spending, and saving these two resources on consumer behavior and well-being (Gino and Mogilner 2014; Liu and Aaker 2008; Mogilner and Aaker 2009; Zauberger and Lynch 2005).

The last reason was theoretical. According to our theory, money and social connectedness are interchangeable, because both are means to extract wants and needs from society. However, having ample time cannot accrue the same benefits from society that having money or social connectedness can. Therefore, while a surge in social connectedness may offset the desire for money, it should not have an effect on the desire for time.

Not only did we change the operationalization of desire for money, we changed the manipulation too. In experiment 1, nostalgia participants thought about their past, whereas neutral participants thought about their future. Thus, in experiment 2 we used an autobiographical narrative task that focused all participants on a memory from their past. We predicted that participants who recalled a nostalgic event, relative to an ordinary past event, would part with more money. However, we predicted no differences between participants who recalled a nostalgic event, compared to an ordinary event, with regards to the allocation of time.

## Method

*Participants and Design.* One hundred and twenty-nine participants (64 females;  $M_{\text{age}} = 24.37$ ,  $SD = 8.66$ ) at the University of Minnesota completed the experiment for partial course credit or a chance to earn up to \$4.75. This study used a 2 (nostalgia vs. neutral)  $\times$  2 (time vs. money) design, with nostalgia versus neutral conditions as predictors of the amount of money versus time given to the (ostensible) other player.

*Procedures.* Participants learned that the experimental session consisted of two unrelated studies, with one study investigating life events and another study pilot-testing a new game. They also learned that there was another set of participants down the hall with whom they would be randomly matched for the game portion of the session.

Under the guise of the life events study, we randomly assigned half of the participants to write about a time they felt nostalgic. We defined nostalgia as “a sentimental longing for a personally experienced past” (New Oxford Dictionary of English 1998, p. 1266). We assigned the other half of participants to the neutral condition and instructed them to write about an ordinary event from their past (Wildschut et al. 2006). All participants wrote for 3 minutes and 30 seconds.

We conducted a pretest to confirm the effectiveness of the manipulation. After writing about the nostalgic or ordinary memory, participants ( $N = 30$ , 13 females) rated the same three nostalgia items as in experiment 1 (e.g., “Right now, I am feeling quite nostalgic”; 1 = strongly disagree, 7 = strongly agree). We averaged these items into a nostalgia index ( $\alpha = .98$ ). As intended, participants who wrote about a nostalgic memory reported higher levels of nostalgia than those who wrote about an ordinary autobiographical memory ( $M_{\text{nostalgia}} = 5.33$ ,  $SD = 1.28$  vs.  $M_{\text{neutral}} = 4.23$ ,  $SD = 1.55$ ;  $t(28) = 4.82$ ;  $p < .05$ ).

Next, the experimenter announced that the game study they were pilot-testing was about to start. The game was described as having two players, a receiver and a proposer, the latter of whom is granted an endowment of money or time (depending on condition). Participants were told that the proposer decides how much to keep and how much to give to the receiver. At this point, participants chose out of a hat which role would be theirs; all slips of paper indicated “proposer.” As proposers, participants were instructed to allocate 19 units of their resource (time or money) to the receiver down the hall. Participants were randomly assigned to play the game either with money (money-resource condition) or with time (time-resource condition).

In the money-resource condition, participants had the option of allocating money to the receiver. They were given an envelope containing \$4.75 in fake money, which could be allocated in \$0.25 increments (19 units of money total) and were instructed to decide the amount of money they wanted to keep for themselves and leave the amount of money they decided to part with, if any, for the receiver in the envelope.

In the time-resource condition, participants could divide units that represented the time they could leave early from the experiment. Participants expected that the experiment would take 30 minutes, and the first part took less than 10 minutes to complete. Subsequently, participants were given 19 units of time (at 30 seconds each, totaling 9 minutes and 30 seconds) and were allowed to allocate all, some, or none of the time to the receiver.

## Results

We predicted that participants who wrote about a nostalgic event, compared to an ordinary event, would give more money to the receiver in the money condition, but not more time in the time condition. A 2 (event: nostalgia vs. ordinary past life)  $\times$  2 (resource: money vs. time) ANOVA revealed the predicted effect: there was a significant interaction between nostalgia condition and type of resource ( $F(3, 125)$

= 4.03,  $p < .05$ ; fig. 1). We proceeded with simple effects analyses. In the money dictator game, nostalgic event participants gave significantly more resource units away compared to those in the ordinary past event condition ( $M_{\text{nostalgia}} = 8.09$ ,  $SD = 4.95$  vs.  $M_{\text{neutral}} = 5.74$ ,  $SD = 4.79$ ;  $F(1, 125) = 5.53$ ,  $p < .05$ ). However, in the time dictator game, there was no difference in resource allocation between nostalgic and ordinary event participants ( $M_{\text{nostalgia}} = 7.58$ ,  $SD = 3.39$  vs.  $M_{\text{neutral}} = 8.59$ ,  $SD = 4.31$ ;  $F < 1$ , NS).

## Discussion

Experiment 2's results bolstered confidence in our hypotheses. Participants who had recalled a nostalgic event gave away more money, but not time, than those who had recently recalled an ordinary past life event. Nostalgia participants allocated 42% of their money (8.09 units), approximately 40% more money than those in the neutral condition, indicating a weakened desire to hold onto their money. Thus, experiment 2 established the specificity of the effect—namely that nostalgia influences motivation for money, but not for another resource (i.e., time). Our time allocation results may appear somewhat inconsistent with those from prior research demonstrating that nostalgia increased charitable intentions of time through an increased sense of empathy (Zhou et al. 2012). However, it is likely that the dictator game context used in the current experiment did not elicit feelings of empathy akin to those found in the charitable contexts implicated by Zhou and colleagues.

Experiments 1 and 2 used different operationalizations of desire for money and methods of eliciting nostalgia, which confers confidence in the results. Nevertheless, alternative explanations are plausible. Recalling a nostalgic event may create a mind-set that decreases the present economic value of money or increases certain states that influence people to loosen their grasp on their money. Experiment 3 tested these alternative explanations.

## EXPERIMENT 3: IMPORTANCE OF MONEY

The purpose of experiment 3 was twofold. First, this experiment aimed to rule out alternative explanations for a weakened desire for money. Second, the experiment aspired to contribute a new desire for money measure, namely, perceived money importance. We reasoned that participants who desired money more would elevate its importance compared to those who desired money less.

Although we posited that the relation between nostalgia and money is due to increased social connectedness, our nostalgia manipulations invite alternative explanations. For example, participants in the nostalgia versus neutral condition may have felt that money was less economically valuable than it was in the past, resulting in a weakened grasp on it. Also, participants in the nostalgia versus neutral condition may have felt more relaxed, a state that augments the monetary valuation of products (Pham, Hung, and Gorn 2011), which in turn could have been reflected in higher

FIGURE 1



willingness to pay in experiment 1. Finally, participants in the nostalgia versus neutral condition may have felt more pleasant, softer, cooperative, distracted, or less confrontational, which may have contributed to giving more money away in experiment 2.

## Method

**Participants and Design.** We recruited 83 participants (58 females,  $M_{\text{age}} = 35.53$  years,  $SD = 12.76$ ) on Amazon's Mechanical Turk (MTurk) to take part in exchange for \$1. The experiment used a two-cell design, with nostalgia versus neutral conditions as predictors of desire for money.

**Procedures.** Participants were invited to take part in a study about life events and attitudes. They completed the writing task used in experiment 2. As in experiment 2, they were randomly assigned to write about a nostalgic or ordinary autobiographical event. Next, they completed the dependent measures.

**Money Importance.** To assess desire for money, participants indicated their agreement with the statement "Money is important to me" (1 = strongly disagree, 7 = strongly agree).

**Economic Value of Money.** Participants reported their agreement with three items: "Things were less expensive than they are now"; "Items seem more expensive to buy now than in the past," and "It takes more money now to buy the same amount of goods and services than in the past" (1 = strongly disagree, 7 = strongly agree;  $\alpha = .77$ ).

**Feelings.** Participants indicated their current feelings by moving a slider between each bipolar adjective on a 100-point slider scale: unpleasant-pleasant, hard-soft, not distracted-distracted, and not confrontational-confrontational. Participants also reported feelings of being relaxed and cooperative (1 = definitely do not feel, 7 = definitely feel).

Last, they completed a nostalgia manipulation check (1 = definitely do not feel, 7 = definitely feel).

## Results

*Manipulation Check.* As expected, participants in the nostalgic event condition reported feeling more nostalgia compared to those in the ordinary event condition ( $M_{\text{nostalgia}} = 5.16$ ,  $SD = 1.61$  vs.  $M_{\text{neutral}} = 4.18$ ,  $SD = 1.88$ ;  $t(81) = 4.18$ ,  $p < .05$ ). The manipulation was effective.

*Money Importance.* We predicted that participants who wrote about a nostalgic event would report lower scores on the money importance item compared to those who wrote about an ordinary autobiographical event. The results of an independent samples  $t$ -test of confirmed our prediction: participants in the nostalgia condition, relative to those in the neutral condition, reported lower agreement with the statement that money is important ( $M_{\text{nostalgia}} = 4.63$ ,  $SD = 1.72$  vs.  $M_{\text{neutral}} = 5.30$ ,  $SD = 1.22$ ;  $t(81) = 2.04$ ,  $p < .05$ ).

*Economic Value of Money.* We combined the three economic value of money items to form a single index of past versus present economic value of money. An independent samples  $t$ -test revealed that the two groups did not differ on perceived past versus present economic value of money ( $t < 1.5$ , NS).

*Feelings.* There were no differences across conditions for the degree to which participants felt relaxed and cooperative (all  $t < 1$ , NS). Similarly, there were no significant differences across conditions with regard to whether they felt soft versus hard, confrontational, distracted, or pleasant (all  $t < 1$ , NS).

## Discussion

Experiment 3 established that participants who wrote about a nostalgic event lowered their perceived money importance compared to those who wrote about an ordinary autobiographical event. Also, this experiment ruled out several alternative explanations. Specifically, participants in the nostalgic versus neutral condition did not differ in the extent to which they felt relaxed, pleasant, soft, confrontational, distracted, and cooperative, and they did not differ in the extent to which they regarded the economic value of money as lower now than in the past.

Nostalgia is bittersweet as it entails both positive and negative affect (Hepper et al. 2012; Stephan et al. 2012; Wildschut et al. 2006). Thus, an increase in overall positive affect, negative affect, or both (mixed-affect) may explain the relation between nostalgia and money. Research has shown that consumers in a positive or negative mood are more impulsive with their money compared to those in a neutral mood (Gardner and Rook 1988; Rook 1987; Rook and Gardner 1993). Therefore, new measures in experiment 4 tested whether changes in affect could explain our results.

## EXPERIMENT 4: VALUE OF MONEY

Experiments 1–3 tested the hypothesis that nostalgia weakens the desire for money using cognitive (willingness to pay; experiment 1), behavioral (dictator game; experiment 2), and attitudinal (importance of money; experiment 3) measures. Experiment 4 asked participants to report their current desire for money, thus providing a face-valid assessment of money's attractiveness. We predicted that, after writing about a nostalgic versus an ordinary autobiographical event, participants would report lower scores on a money value scale. Last, we tested whether positive and negative affect were viable alternative explanations for the effect.

## Method

*Participants and Design.* We recruited 100 participants on Amazon's MTurk in exchange for \$1 (54 females;  $M_{\text{age}} = 35.53$  years,  $SD = 12.81$ ). This experiment used a two-cell design, with participants writing about either a nostalgic event or an ordinary autobiographical event.

*Procedures.* Under the guise of a life events study, participants were involved in the same writing task as that of experiment 2. Specifically, they were randomly assigned to write about a nostalgic or ordinary autobiographical event. Next, they completed a set of surveys that contained the dependent and affect measures.

*Affect.* To address the possibility that the obtained effects were due to differences in positive or negative affect, participants rated their affective states on six positive and six negative adjectives (1 = strongly disagree, 7 = strongly agree; Martin et al. 1997) that have been used in prior nostalgia research (e.g., Wildschut et al. 2010). The positive adjectives were: happy, active, ecstatic, calm, relaxed, and general good mood ( $\alpha = .76$ ). The negative items were: upset, sad, disturbed, tired, sluggish, and unhappy ( $\alpha = .95$ ).

*Money Value.* To assess desire for money, participants completed a six-item scale ( $\alpha = .74$ ). In particular, they rated their agreement with the following items: "There is more to life than money (reverse scored)"; "People who chase money often chase away happiness (reverse scored)"; "The best things in life are free (reverse scored)"; "Frankly speaking, having money is something that I value"; "To get the most of life, people need money," and "Frankly speaking, having money isn't all that important to me (reverse scored)" (1 = strongly disagree, 7 = strongly agree).

## Results

*Affect.* We averaged scores on the positive and negative affect adjectives and created two indices. Consistent with much of the literature (Stephan et al. 2012; Wildschut et al. 2006; Zhou et al. 2012), an independent samples  $t$ -test showed that participants in the nostalgia condition scored

higher on the positive affect scale compared to those in the neutral condition ( $M_{\text{nostalgia}} = 5.56$ ,  $SD = 1.13$  vs.  $M_{\text{neutral}} = 4.47$ ,  $SD = 1.52$ ;  $t(98) = 3.76$ ,  $p < .01$ ). Scores for negative affect were marginally different between conditions, with participants in the neutral condition indicating somewhat more negative affect than those in the nostalgia condition ( $M_{\text{nostalgia}} = 1.78$ ,  $SD = 1.24$  vs.  $M_{\text{neutral}} = 2.35$ ,  $SD = 1.54$ ;  $t(98) = 1.89$ ,  $p < .10$ ).

**Money Value.** We predicted that participants who recalled and wrote about a nostalgic event, relative to an ordinary autobiographical event, would report lower scores on the desire for money scale. Indeed, an independent samples  $t$ -test with condition as the between-subjects factor revealed that participants in the nostalgia condition reported lower scores compared to those in the neutral condition ( $M_{\text{nostalgia}} = 2.52$ ,  $SD = 1.02$  vs.  $M_{\text{neutral}} = 3.03$ ,  $SD = 1.10$ ;  $t(98) = 2.24$ ,  $p < .05$ ). Note that although positive affect was marginally associated with value of money ( $\beta = -.50$ ,  $p < .07$ ), positive affect did not mediate our effect: Hayes (2012) PROCESS SPSS macro using 5,000 boot-strapped samples revealed a nonsignificant indirect path between nostalgia and money value (95% CI included zero:  $-.0736$  to  $.3329$ , model 4).

## Discussion

Building on the findings of experiments 1–3, experiment 4 tested the relation between nostalgia and desire for money using a face-valid assessment of the latter construct: simply asking how much participants valued or desired money. In addition, experiment 4 provided evidence that nostalgia's influence on the desire for money was not mediated by positive or negative affect. This finding is consistent with evidence that the influence of nostalgia on a variety of outcomes is independent of concomitant positive or negative affect (Cheung et al. 2013; Hepper et al. 2012; Stephan et al. 2012; Turner et al. 2013; Wildschut et al. 2006; Zhou et al. 2012). While experiments 1–4 have demonstrated the robustness of our effect and excluded positive and negative affect as alternative explanations, we have yet to provide evidence confirming our proposed process, social connectedness. We offered this evidence in experiments 5 and 6.

## EXPERIMENT 5: UNPLEASANT SOUNDS

Experiment 5 had two primary aims. The first was to use a new measure of desire for money. Instead of asking participants how much they wanted products or money, we asked what costs they would be willing to incur in order to gain money. Like the influential work of Ariely, Loewenstein, and Prelec (2003), we gave participants a sample of aversive sounds and asked them to tell us how long they would be willing to relisten to them in order to earn \$5. As with fervent music fans, early adopters, and bargain seekers who suffer outdoors for days in order to be the first in line for a valued experience, we reasoned that wanting something more translates into willingness to suffer for it. Hence our

prediction that nostalgia-induced participants, due to their weaker interest in money, would submit lower duration bids than would others.

The second aim was to document the proposed process. We gathered process evidence using two measures of social connectedness. First, we assessed participants' momentary perceptions of social connectedness with items validated in prior nostalgia research. Second, we assessed social connectedness through content analyses from participant narratives. Regardless of how we measured social connectedness, we hypothesized that participants in the nostalgic (compared to neutral) condition would indicate they would listen to aversive sounds for a shorter time in exchange for a set amount of money, an effect that would be mediated by stronger social connectedness. Also, through content analyses we measured mention of positive and negative emotions, allowing us to address positive and negative affect as alternative explanations for the nostalgia-money effect.

## Method

**Participants and Design.** We recruited 105 participants via Amazon MTurk in exchange for \$1 (66 females,  $M_{\text{age}} = 36.90$  years,  $SD = 12.61$ ). This experiment used a two-cell design, with nostalgia versus neutral conditions predicting length of time participants would listen to sounds in exchange for money.

**Procedures.** Participants took part in an online study about life events and attitudes. First, they completed the same writing task as that of experiment 2 in which they were randomly assigned to write about a nostalgic or ordinary autobiographical event. Next, to assess perceptions of social connectedness, participants indicated the degree to which they felt "loved" and "protected" (1 = not at all, 7 = extremely; Wildschut et al. 2006).

Participants then learned that they would complete a judgment task in which they would be provided with samples of unpleasant sounds and asked to indicate how long they would listen to each sound in exchange for \$5. Participants listened to three 8-second clips of a shrill-sounding violin, rooster crowing, and car crash (Sony Pictures Sound Effects Series 2004). After each sound, participants indicated the length of time they would listen to it again in exchange for \$5.

## Results

We discarded data from one participant whose reported time scores for the sound clips were more than 8 standard deviations above the mean.

**Social Connectedness.** We combined ratings of feeling "loved" and "protected" into a social connectedness index ( $r = .86$ ). As predicted, participants who wrote about a nostalgic (versus ordinary autobiographical) event reported a higher degree of social connectedness ( $M_{\text{nostalgia}} = 5.88$ ,  $SD = 1.24$  vs.  $M_{\text{neutral}} = 4.88$ ,  $SD = 1.74$ ;  $t(102) = 3.42$ ,  $p < .01$ ).

*Narrative Coding.* We measured indicators of social connectedness and affect with the Linguistic Inquiry and Word Count software (LIWC; Pennebaker, Booth, and Francis 2007). LIWC matches each word to an internal dictionary that contains different classifications of words. To measure indicators of social connectedness the software matched the number of words in each narrative against a dictionary that classified words relating to friends, family, and others. To measure indicators of positive and negative affect the software matched the number of words against an internal dictionary relating to positive and negative affect. We then converted the word counts (number of matches) indicating social connectedness and affect into percentages to account for varying narrative lengths.

We used independent samples *t*-test to test the effect of nostalgia condition on these indicators of social connectedness and affect. As predicted, those in the nostalgia condition mentioned social connectedness more often than those in the neutral condition ( $M_{\text{nostalgia}} = 3.04$ ,  $SD = 2.04$  vs.  $M_{\text{neutral}} = 1.49$ ,  $SD = 2.04$ ;  $t(102) = 3.74$ ,  $p < .01$ ). Nostalgia participants also mentioned positive affect more often than did neutral participants ( $M_{\text{nostalgia}} = 5.07$ ,  $SD = 3.14$  vs.  $M_{\text{neutral}} = 1.74$ ,  $SD = 1.70$ ;  $t(102) = 6.09$ ,  $p < .01$ ). The two groups did not differ on negative affect ( $t < 1$ , NS).

*Duration Spent Listening to Aversive Sounds.* We transformed the violin, rooster, and car crash time scores using a natural log transformation (Laran and Janiszewski 2009) to normalize the distribution of the scores. Given that the time scores varied across the different types of sounds (i.e. the car crash scores were 20% shorter than the other clips), we standardized the transformed scores to create a duration index ( $\alpha = .83$ ). As expected, an independent samples *t*-test with nostalgia condition predicting duration revealed that participants in the nostalgia condition, compared to those in the neutral condition, indicated that they would listen to the aversive sounds for a shorter time ( $M_{\text{nostalgia}} = -.12$ ,  $SD = .81$  vs.  $M_{\text{neutral}} = .20$ ,  $SD = .91$ ;  $t(102) = 1.89$ ,  $p = .06$ ).

### Mediation Analysis: Social Connectedness (Loved, Protected)

We aimed to test next for the indirect effect of social connectedness (i.e., feeling loved and protected). We have demonstrated that nostalgia predicted both the duration of aversive sounds that participants would be willing to endure in exchange for money and the degree of social connectedness. Next, we established that social connectedness was related to duration ( $\beta = -.13$ ,  $p < .05$ ). Mediation analyses using 5000 bootstrapped samples (Hayes 2012; PROCESS SPSS macro; model 4) with nostalgia condition as the independent variable, social connectedness as the mediator, and duration as the dependent variable revealed that, when controlling for social connectedness, the direct effect of nostalgia was nonsignificant ( $\beta = -.22$ ,  $p = .22$ ) and the indirect path did not include zero ( $\beta = -.10$ , 95% CI:

-.2891 to -.0005), thus confirming our mediational hypothesis.

### Mediation Analysis: Social Connectedness (LIWC)

Consistent with the above results, mediation analysis using 5,000 bootstrapped samples (Hayes 2012; PROCESS SPSS macro; model 4) revealed an indirect effect of LIWC social connectedness on the relation between nostalgia and desire for money ( $\beta = -.12$ , 95% CI: -.2945 to -.0256), further confirming our mediational hypothesis. Although nostalgia predicted positive affect (as measured by LIWC positive emotion scores), positive affect did not account for the relation between nostalgia and desire for money (95% CI included zero: -.1971 to .1633).

### Discussion

Experiment 5 revealed that nostalgia participants indicated that they would endure aversive sounds for shorter durations in exchange for a monetary reward compared to neutral participants. The operationalization of desire for money was willingness to listen to annoying sounds. Having already heard snippets of a car crash, screeching violin, and rooster crowing, participants indicated how long they would be willing to listen to them again in order to receive \$5. As predicted, being in a nostalgic mode made people less willing than others to endure unpleasantness in order to gain money. That this effect was due to nostalgia's capacity to foster social connectedness was borne out by the results of mediational analyses. Social connectedness, whether measured by momentary perceptions of being loved and protected or in participants' narratives, mediated the nostalgia-money effect. Although nostalgia predicted positive affect, it did not account for the nostalgia-money effect. Nostalgic memories of the past promoted in-the-moment social connectedness, which in turn weakened motivation for money.

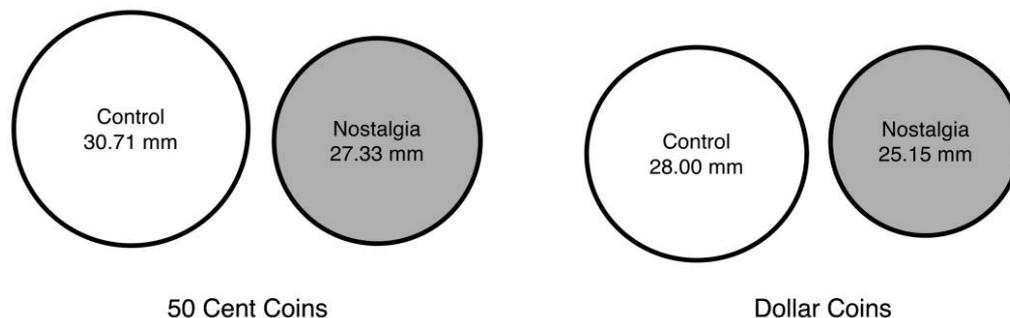
## EXPERIMENT 6: COIN SIZES

Experiments 1 and 2 tested the hypothesis that nostalgia decreases the desire for money by measuring participants' motivation to hold onto their money. Experiments 3 and 4 assessed expressed importance of money, while experiment 5 asked how much suffering one was willing to endure in order to gain money. Experiment 6 addressed a final aspect of desire for money, namely, implicit desire.

Experiment 6 tested the hypothesis using an implicit measure, the size of coins that participants drew from memory. Bruner and Goodman's (1947) observation that poor children drew larger coins than wealthier children suggests that perceptual differences in coin size represent differences in motivations surrounding money, a claim backed by subsequent empirical research (Dubois, Rucker, and Galinsky 2010; Zhou et al. 2009). We predicted that nostalgic participants would draw smaller coins than neutral participants, as a representation of their attenuated desire for money.

FIGURE 2

## EXPERIMENT 6: SIZE OF COINS



NOTE.—Circles are drawn to scale.

Our hypothesis that nostalgia decreases the desire for money was built on research demonstrating that nostalgic reflection increases connectedness (e.g., Wildschut et al. 2006, 2010). In experiment 6, we used the same content analysis procedure from experiment 5 to test for evidence of social connectedness as the underlying process.

## Method

**Participants and Design.** Fifty-six undergraduates at the University of Minnesota took part in exchange for extra course credit. One participant did not complete the experiment, leaving 55 participants with usable data (24 females;  $M_{\text{age}} = 21.15$ ,  $SD = 1.33$ ). The experiment implemented a two-cell design, with nostalgia versus neutral conditions as predictors of coin sizes.

**Procedures.** Participants learned that they would take part in several unrelated studies, the first about a life event. Participants in the nostalgia condition wrote about a nostalgic event, whereas those in the neutral condition wrote about the route they took home from high school, which is an ordinary autobiographical memory condition used in prior work (Vohs and Heatherton 2001). Pretests revealed that college-aged participants were often nostalgic for high school memories; therefore, we decided to use this time frame to provide a strong comparison condition.

An online pretest ( $N = 29$ ; 23 females) established the effectiveness of the manipulation to elicit nostalgia. After writing about the nostalgic or ordinary event, participants responded to the same three items as in experiment 1 (e.g., “I feel nostalgic at the moment”); 1 = strongly disagree, 7 = strongly agree;  $\alpha = .69$ ). As intended, participants who wrote about a nostalgic event reported greater nostalgia than those who wrote about an ordinary event ( $M_{\text{nostalgia}} = 6.49$ ,  $SD = .71$  vs.  $M_{\text{neutral}} = 3.15$ ,  $SD = 1.65$ ;  $t(27) = 4.82$ ,  $p < .05$ ).

Next, participants completed an ostensibly unrelated drawing activity. They were given a sheet of paper on which

to draw a U.S. 50-cent coin and a dollar coin. Instructions read, “Please draw the approximate sizes of the following coins (by drawing a circle). Try to be as accurate as possible. Draw from your memory, doing the best job you can, a: (1) US 50-cent coin, (2) US one dollar coin.” Last, they completed a demographics form.

## Results

**Coin Size.** We hypothesized that nostalgic, compared to neutral, participants would draw smaller coins as an indication of a weaker desire for money. We measured the diameters of the coins at their widest (Zhou et al. 2009) and subjected this number to a 2 (memory: nostalgic vs. ordinary)  $\times$  2 (coin type: 50-cent vs. dollar) mixed measures ANOVA, with nostalgia condition as the between-subjects factor and coin type as the within-subjects factor. As expected, the effect of condition on coin sizes was significant, with participants in the nostalgia, relative to neutral, condition drawing smaller coins ( $M_{\text{nostalgia}} = 26.24$  mm,  $SD = 4.05$  vs.  $M_{\text{neutral}} = 29.36$  mm,  $SD = 5.81$ ;  $F(1, 52) = 5.25$ ,  $p < .05$ ; fig. 2). Unsurprisingly, there was a main effect for coin type, with participants drawing the 50-cent coin bigger than the dollar coin ( $M_{50\text{-cent}} = 29.05$  mm,  $SD = 7.68$  vs.  $M_{\text{dollar}} = 26.60$  mm,  $SD = 5.81$ ;  $F(1, 52) = 4.23$ ,  $p < .05$ ), as reflected in coin objective size. The interaction between nostalgia condition and coin type was nonsignificant ( $F < 1$ , NS).

**Narrative Coding.** As in experiment 5, we measured social connectedness and affect using the LIWC software (Pennebaker et al. 2007). The independent samples  $t$ -test revealed an effect of nostalgia on social connectedness and affect in participant narratives. As predicted, nostalgia participants mentioned social connectedness more often than neutral participants ( $M_{\text{nostalgia}} = 2.67$ ,  $SD = 2.78$  vs.  $M_{\text{neutral}} = .78$ ,  $SD = .91$ ;  $t(53) = 3.63$ ,  $p < .01$ ). Nostalgia participants also mentioned positive affect more often than did neutral participants ( $M_{\text{nostalgia}} = 3.42$ ,  $SD = 2.51$  vs.  $M_{\text{neutral}} = .89$ ,  $SD$

= 1.29;  $t(53) = 4.78, p < .01$ ). The two groups did not differ on negative affect ( $t < 1.5$ , NS).

### Mediation Analysis

To test for the indirect effect of nostalgia on coin size through social connectedness, we created an index using the standardized coin sizes as the dependent measure (Baron and Kenny 1986). We have demonstrated that nostalgia predicted both (LIWC measured) social connectedness ( $\beta = 1.91, p < .01$ ) and coin size ( $\beta = -3.31, p < .05$ ). Next, we established that social connectedness was related to coin size ( $\beta = -.76, p < .05$ ). Mediation analyses using 5,000 boot-strapped samples (Hayes 2012; PROCESS SPSS macro; model 4) with nostalgia condition as the independent variable, social connectedness as the mediator, and coin size index as the dependent variable revealed indirect mediation (Zhao, Lynch, and Chen 2010): controlling for social connectedness, the direct effect of nostalgia on coin size was no longer significant ( $\beta = -2.62, p = .08$ ). Furthermore, the indirect path had a 95% bias-corrected confidence interval that excluded zero ( $\beta = -.94, 95\% \text{ CI: } -2.3161 \text{ to } -.0095$ ), demonstrating that social connectedness mediated the effect of nostalgia on coin size. Although nostalgia predicted positive affect ( $\beta = 2.53, p < .01$ ), positive affect did not mediate the effect of nostalgia on coin size (95% CI for indirect path between nostalgia and coin size included zero:  $-1.7310 \text{ to } 1.6619$ ).

### Discussion

In experiment 6, participants who had earlier thought about a nostalgic event drew smaller coins than those who had earlier thought about an ordinary autobiographical event. These results are consistent with our hypothesis that nostalgia diminishes the desire for money, as prior work has linked representations of coins to desire for money (Bruner and Goodman 1947; Dubois et al. 2010; Zhou et al. 2009). Experiment 6 also demonstrated that representing coins as small in size was mediated by social connectedness in participants' narratives. Although participants in the nostalgia condition mentioned more positive affect than those in the neutral condition, this affective state did not account for the relation between nostalgia and money.

## GENERAL DISCUSSION

The current work tested the hypothesis that nostalgia reduces the desire for money, a hypothesis based on research regarding nostalgia and the psychology of money. The literature strongly supports the notion that nostalgia fulfills the need to belong and heightens feelings of social connectedness (Hepper, Robertson, et al. 2014; Seehusen et al. 2013; Wildschut et al. 2006, 2010; Zhou et al. 2008). The psychology of money literature has shown that the mere presence of money can reduce the desire for social bonds and produce a preference for isolation (Vohs et al. 2006, 2008). Our research brought together these findings to test whether

nostalgia, through its capacity to foster social connectedness, would lead individuals to behave as if they had weak motivation toward money.

The results of six experiments were consistent with this hypothesis. We manipulated nostalgia through an advertisement perusal task (experiment 1) or instructions to recall an autobiographical event (experiments 2–6). Measures of desire for money ranged from cognitive (willingness to pay for desired products, experiment 1; willingness to expend effort, experiment 5), to behavioral (dictator game, experiment 2), perceptual (coin size, experiment 6), and valuation (experiments 3 and 4). We collected process evidence using validated self-report scales (experiment 5) and content analysis of autobiographical narratives (experiments 5 and 6). Finally, we tested the hypotheses across interpersonal (experiment 2) and intrapersonal (experiments 1, 3–6) domains.

We also implemented several procedural changes in order to gather evidence of robustness. Operationalizations of desire for money included decisions that were hypothetical (as in willingness to pay) or real and binding (as in the dictator game). One experiment assessed the desire for money in an interpersonal context, whereas others did so with intrapersonal tasks. Also, we measured desire for money explicitly (dictator game, valuation, effort) and implicitly (estimates of coin sizes). We showed that the experience of nostalgia decreases the desire for money through augmented social connectedness both by locating this mechanism through narrative coding and by assessing it in the moment. Finally, we were able to elicit a nostalgic state by having participants view an advertisement that featured childhood memories versus directing them to conjure up new memories of their future or having them recollect nostalgic versus ordinary memories. Throughout these variations in procedure, the pattern of results remained similar suggesting that the effect is reliable and robust.

Our findings also addressed alternative predictions centered on nostalgia-elicited loss. Given that social exclusion stimulates the desire for money (Zhou et al. 2009), it was possible that nostalgia, in evoking a sense of lost social bonds, would have heightened money's attractiveness. It was also possible that nostalgia-evoked loss of social bonds would have motivated people to focus more on building social connections and less on having money, thus decreasing desire for money. Nostalgia-evoked loss of social relationships could also increase acceptance of other types of losses, including loss of money. Yet across our studies not only did we find that our nostalgia manipulations created a surge in social connectedness—a finding consistent with past research (e.g., Wildschut et al. 2006, 2010)—but that surge in social connectedness mediated the effect of nostalgia on money.

### Money and Social Markets

People use money to navigate the social and cultural system. The more money one has, the easier it is to work the system in order to achieve what one needs. Yet people can get by without money if they have a network of others on

whom they can rely to satisfy their basic needs. (Babies are an extreme but befitting example.) Therefore, in modern life, two mechanisms exist for individuals to acquire resources to meet their needs. Being able to make good use of one means that (given limited time, effort, and energy) motivation to be in control over the other might diminish.

Our results align with such a notion. Nostalgia fosters social connectedness (Wildschut et al. 2006; Zhou et al. 2008), which in turn decreases reliance on and therefore desire for money. Other investigations also point to the notion that individuals distinguish between social and monetary systems of exchange. Heyman and Ariely's (2004) "tale of two markets" showed that people calibrate their effort to money they expect to receive but not so if their effort is exchanged for a gift in the social market. Studies distinguishing social and monetary resources demonstrated that having money renders social connectedness less important, whereas not having social connectedness renders money all the more imperative (Vohs et al. 2006; Zhou et al. 2009). In our research, we approached this notion in the opposite direction and show that having social connectedness renders having money less relevant. By doing so we established that individuals not only distinguish between the two markets but also treat them as substitutes, at least to a degree.

Yet in the current investigation, bringing people into a nostalgic state did not earn them any more friends than previously. Even without a change in actual social connectedness, nostalgic memories were sufficient to make people behave as if they had experienced a bona fide increase in social connections.

In summary, evidence is accumulating that individuals perceive social and monetary resources as interchangeable. If they have ample resources of one kind, they behave as if they do not need the other, whereas insufficiencies in one resource enhance the motivation to obtain the other.

## Implications and Applications

The implications for the money-nostalgia effect are far-reaching for marketers, as well as for policy makers, and charitable and political organizations. For marketers, our findings suggest feeling nostalgic could decrease consumer price sensitivity. In addition, results from experiment 1 suggest that feeling nostalgic leads consumers to part with more money when purchasing items than otherwise. However, these same findings can be detrimental for the consumer, especially for those who are prone to nostalgia, such as the elderly (Holbrook and Schindler 1994). These findings may provide a reason why the elderly are particularly at risk for financial scams (Repa 2013), as an increased propensity for nostalgia may result in a weaker hold on their money.

To be sure, nostalgia-evoked desire to part with one's money could bring good outcomes, too. The benefits of nostalgia-induced giving could include helping or charity donations (Stephan et al. 2014; Zhou et al. 2012). Experiment 2 documented that nostalgic participants gave money to others whom they did not know nor even met, a setting that mimics many contexts in which consumers give money

to aid others. In times of recession, when consumers are reluctant to part with their money, nostalgia could be used to help stimulate a dwindling economy, which may be one reason why nostalgia-themed promotions and products have been so popular in the past few years (Elliot 2009).

Not only can mainstream marketers make use of nostalgia, but campaigners can also leverage it for political donations. A Gallup poll (Saad 2008) found that for Baby Boomer and Generation X respondents alike, the ideal president is the president of their teenage years (Kennedy and Reagan, respectively). Campaign donations are similar to charity donations in being personal costs to oneself for a greater good.

Inducing nostalgia could bring big benefits for those seeking to part consumers from their money. Nostalgia in the marketplace is making a comeback. Nostalgic themed movies were a trend leading the 2012 Oscar nominations (e.g., *Hugo*, *The Artist*; Cieply and Barnes 2012). Television shows that harken to a time gone past, such as *Mad Men* and *Boardwalk Empire* are also rising in popularity (Wickman 2012). Furthermore, there is a shift toward marketing communications using personal nostalgia. For example, Subaru's 2012 "First Car Story" campaign allows users to create their own first car story using real-time animation. Our findings suggest why: Getting people to think nostalgically can entice them to spend money.

A craving for nostalgia has been especially strong during the past few years, but that does not mean that nostalgia is only relevant during a finite period. There are times of the year when people may be particularly prone to nostalgia, such as the winter holiday season. We tested the idea that people long for objects, others, and times from the past more during the holiday season compared to other periods of the year. Some participants completed Batcho's (1995) Nostalgia Inventory study during the 2009 Christmas holiday season ( $N = 68$ ), whereas others completed it during the third week of January 2010 ( $N = 42$ ). The Nostalgia Inventory is a 20-item scale that captures to the extent to which people miss objects, people, experiences, and places from the past ("Rate how much you miss each of the items listed below"; 1 = not at all, 5 = very much). Items included "family," "not having to worry," and "toys." We combined the 20 items into a nostalgia index ( $\alpha = .87$ ). As hypothesized, participants reported being more nostalgic during the Christmas holiday season compared to mid-January ( $M = 2.81_{\text{Christmas}}$  vs.  $M_{\text{January}} = 2.52$ ;  $t(109) = 2.34$ ,  $p < .05$ ). The periodicities in nostalgic feelings often are—not coincidentally—tied to heightened consumer spending.

## Limitations and Future Research

We showed that nostalgia decreases the desire for money, because it fosters social connectedness. One promising area of research includes examining whether nostalgia influences different types of products. Nostalgic individuals, whose need to belong is sated, may show relatively weak preferences for socially connecting products. In the current research, we chose products that did not necessarily delineate between social and nonsocial, as we were concerned with

demonstrating the general effect of nostalgia on reduced desire for money. A nuanced view of nostalgia and products warrants future attention.

Research could also assess how different types of nostalgia influence consumer behavior. The content of nostalgic narratives typically includes close others at momentous events (Sedikides et al. 2008; Wildschut et al. 2006). There may be differences in recalling nostalgic events about items (e.g., toys, books, games) versus close others. Nostalgia for items (vs. people) may increase the appeal of material goods, which in turn may result in a stronger desire for money.

### CONCLUSION

People are faced with the fundamental life problem of figuring out how to get what they need. Some may prefer to rely on help from others, whereas others may prefer to work the system through monetary exchanges. Our research suggests that these two routes are complementary; when one is satiated, motivation toward the other wanes. Nostalgia can serve as a signal of having attained ample social con-

nectedness. This signal can cause individuals to part with and value money more than otherwise. Even though objective levels of social connectedness were left unchanged, the cue of social connectedness can shift people's motivations such that prioritizing and keeping control over money becomes less pressing.

### DATA COLLECTION INFORMATION

The first author collected and analyzed the data for the six experiments herself from spring of 2009 until autumn of 2013. Experiment 1 (including pretests; spring 2010–autumn 2010), 2 (including pretests; spring 2010–summer 2011), and 6 (spring 2009) data were collected at the University of Minnesota Carlson School of Management Behavioral Lab. Experiments 3 (summer 2011), 4 (summer 2011), 5 (autumn 2013), and experiment 6 pretest (autumn 2010) data were collected online using Amazon's Mechanical Turk. The second author acted as consultant for experiment 6 data analysis. The third author acted as supervisor and consultant for all data analysis.

## APPENDIX

FIGURE A1

EXPERIMENT 1: NOSTALGIA AND NEUTRAL CONDITION ADVERTISEMENTS

**A**



Remember special occasions with others from  
your past...

Take a moment to cherish your childhood memories.

**Kodak**

**B**



A special occasion with others...

Think about making new memories starting today  
and well into your future.

**Kodak**

NOTE.—A, nostalgia advertisement; B, neutral advertisement.

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