RESEARCH ARTICLE

Fighting ageism through nostalgia

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Abstract

Two experiments tested whether nostalgia is a resource for fighting ageism. In Experiment 1, younger adults who recalled a nostalgic (vs. ordinary) encounter with an older adult showed a more positive attitude towards older adults, mediated by greater inclusion of older adults in the self (IOGS). In Experiment 2, these findings were replicated and extended with a subtle nostalgia manipulation. Younger adults identified an older, familiar adult, before writing about an encounter with this person that was characterized by either central (e.g., keepsakes and childhood) or peripheral (e.g., wishing and daydreaming) features of the construct of nostalgia (i.e., prototype). Participants who recalled a central (vs. peripheral) nostalgic encounter reported greater social connectedness, which predicted increased IOGS. In turn, increased IOGS was associated with a lower desire to avoid older adults. Several alternative explanations for the intergroup benefits of nostalgia were ruled out. The research established that nostalgia qualifies as a resource for combatting ageism.

Older people are perceived as forgetful, weak, useless, incompetent, and unproductive (Cuddy, Norton, & Fiske, 2005; North & Fiske, 2012). Such ageist views have harmful consequences for psychological and physical health in older adulthood (Levy, 2009). Negative self-perceptions of ageing predict reduced longevity among older adults (Levy, Slade, & Kasl, 2002; Levy, Slade, Kunkel, & Kasl, 2002; Wurm, Tesch-Römer, & Tomasik, 2007), and negative age stereotypes held earlier in life predict worse health later in life (Levy, Zonderman, Slade, & Ferrucci, 2009). Physical and mental illness in older adults is often misdiagnosed or dismissed as a natural part of ageing, and physicians are less engaged, less respectful, and less supportive when talking to older patients (Bowling, 1999, 2007; Greene, Adelman, Charon, & Friedmann, 1989; Lasser, Siegel, Dukoff, & Sunderland, 1998). In the workplace, older adults have trouble finding and keeping jobs, because they are viewed less positively than younger applicants or employees (Avolio & Barrett, 1987; McCann & Giles, 2002). Although prevailing beliefs suggest that older adults are valued more in Eastern than Western cultures, a recent meta-analysis revealed that, in fact, ageism is also prevalent in the East (North & Fiske, 2015).

Scholars have advanced explanations for age-based prejudice at several levels (North & Fiske, 2012). At the individual level, they have proposed that ageism serves an ego-protective function. According to terror management theory (Greenberg, Pyszczynski, & Solomon, 1986), the human capacity for thinking about the self across time facilitates awareness of one's mortality, creating the potential for death anxiety. However, humans are able to assuage this anxiety via several psychological mechanisms, such as maintaining high self-esteem, building enduring interpersonal relationships, sustaining a strong in-group identity, and holding cultural worldviews that imbue life with meaning and continuity (Norenzayan & Hansen, 2006; Routledge et al., 2011; Sani, Herrera, & Bowe, 2009). Ageism may similarly be an effective means of alleviating fear of one's mortality (Greenberg, Schimel, & Martens, 2002; Martens, Goldenberg, & Greenberg, 2005). Specifically, stereotyping and stigmatizing older adults helps to distance younger adults from their future older selves, and therefore from their own mortality (Nelson, 2005; Snyder & Meine, 1994). As an example, young participants who are primed to think of older (vs. younger) adults subsequently show heightened accessibility of death cognitions, think of themselves as different from older adults, and view older adults unfavourably (Martens, Greenberg, Schimel, & Landau, 2004).

Other theoretical views offer alternative explanations for ageism. For example, interpersonal perspectives posit that older adults are devalued, because their physical appearance is unattractive or uninviting and forms the basis for negative trait inferences (Montepare & Zebrowitz, 2004; Palmore, 2003). Evolutionary approaches posit that older adults are shunned, because they are weak, sick, or contagious (Duncan & Schaller, 2009; Jensen & Oakley, 1980) and so lack the ability

to reciprocate benefits received from other group members (Burnstein, Crandall, & Kitayama, 1994). Sociocultural theories postulate that modernization has rendered obsolete social roles traditionally performed by older people (e.g., storyteller and wisdom sharer; Nelson, 2005). More recently, the socio-structural tradition has emphasized that the rapid growth of the older population aggravates inter-generational tension over the division of scarce resources (e.g., status, income, influence, and employment; North & Fiske, 2012).

Given that ageism is multiply determined, it may be a particularly stubborn form of prejudice. Indeed, effective interventions to combat ageism are scarce, and so it is especially critical to identify new ways to reduce it (Chonody, 2015). The literature indicates that experiencing high-quality intergroup contact or reciprocal sharing of personal information with older adults (Harwood, Hewstone, Paolini, & Voci, 2005; Tam, Hewstone, Harwood, Voci, & Kenworthy, 2006), sharing knowledge about older adults in combination with engagement in an activity (e.g., service learning; Chonody, 2015), and forming a positive mental image of meeting an out-group member (Turner, Crisp, & Lambert, 2007) are promising means of changing attitudes towards older adults. Expanding on this literature, we propose and test the idea that nostalgia can curtail ageism.

Nostalgia as a social emotion

Nostalgia, 'a sentimental longing or wistful affection for the past' (*The New Oxford Dictionary of English*, 1998, p. 1266), was historically regarded as a brain malfunction, psychiatric disorder, or variant of depression (Sedikides, Wildschut, & Baden, 2004). Recent research, however, has rehabilitated its image (Sedikides, Wildschut, Arndt, & Routledge, 2008; Sedikides et al., 2015). This research suggests that nostalgia is a bittersweet, yet predominantly positive, and self-relevant, emotion (Batcho, 2007; Sedikides & Wildschut, 2016a; Vess, Arndt, Routledge, Sedikides, & Wildschut, 2012) that occurs relatively frequently (e.g., about three times a week; Wildschut, Sedikides, Arndt, & Routledge, 2006), is experienced by almost everyone (Luo, Liu, Cai, Wildschut, & Sedikides, 2016; Routledge, Wildschut, Sedikides, Juhl, & Arndt, 2012; Zhou, Sedikides, Wildschut, & Gao, 2008), and is conceptualized similarly across cultures (Hepper et al., 2014). Most importantly, nostalgia is a social emotion.

Nostalgia involves high-level cognitive evaluations of the self in relation to others (Stephan, Sedikides, & Wildschut, 2012). Engaging in nostalgic recollections has a powerful and positive impact on how individuals view themselves and others (Sedikides & Wildschut, 2016b; Sedikides et al., 2016; Seehusen et al., 2013). A key psychological function of nostalgia is social connectedness, defined as a sense of bonding, belongingness, or acceptance. A prototype analysis of the nostalgia construct concluded that 'people and

relationships' (friends, family, and partners) along with 'interpersonal elements or concepts' (belonging, cuddles, tender moments, warmth, and love) are perceived as centrally defining features of nostalgia (Hepper, Ritchie, Sedikides, & Wildschut, 2012; Hepper et al., 2014). Content analytic and survey studies have established that close others as well as momentous events involving close others comprise the bulk of nostalgic referents (Abeyta, Routledge, Roylance, Wildschut, & Sedikides, 2015; Holak & Havlena, 1992; Wildschut et al., 2006). When experimentally induced, nostalgia nurtures sentiments of being protected and loved, counteracts loneliness by engendering perceptions of social support, elevates perceptions of social competence, raises estimates of the number of friends one has, and increases both volunteering intentions and actual charitable donations (Wildschut et al., 2006; Zhou et al., 2008; Zhou, Wildschut, Sedikides, Shi, & Feng, 2012). The beneficial outcomes of nostalgia are, in great part, a function of meaningful past relationships that are made accessible during nostalgic reverie (Cheung et al., 2013; Juhl, Sand, & Routledge, 2012; Routledge et al., 2011; Stephan et al., 2015). It is therefore mainly through rendering accessible mental representations of the self and others in the past that nostalgia strengthens social bonds in the present (Wildschut, Sedikides, & Cordaro, 2011).

Crucially, by reminding people of their meaningful social relationships, nostalgia strengthens motivation to pursue relationship goals and increases self-efficacy about achieving such goals. In particular, nostalgia promotes approach motivation, directing people towards forming or reigniting connections with each other (Stephan et al., 2014). Also, nostalgia renders it more likely that people will perceive relationship goals as important and achievable, report stronger intentions to reconnect with friends, and indicate greater self-efficacy as well as optimism about establishing and maintaining relationships and even about resolving conflicts that arose in those relationships (Abeyta, Routledge, & Juhl, 2015).

Given its potential to enable positive relationships, by encouraging an approach orientation whereby one opens up to the possibility of new relationships or new groups (Stephan et al., 2014), and by motivating people to achieve social goals and increasing self-efficacy about achieving success in relationships (Abeyta, Routledge, & Juhl, 2015), we propose that nostalgia is relevant to prejudice reduction. Specifically, we argue that, when individuals become nostalgic about a known out-group member, they will experience elevated social connectedness and feel more open to, and confident about, forming relationships with out-group members. A significant barrier to positive intergroup relations is intergroup anxiety, that is, a fear of behaving inappropriately when interacting with members of another group, of conflict arising during the interaction, or of being rejected by members of that group (Plant & Devine, 2003; W. G. Stephan & Stephan, 1985). Indeed, one of the most effective methods of promoting

intergroup relations is to ensure that people are confident in contact; that is, they perceive themselves to have the skills and competencies to engage effectively (Turner & Cameron, 2016). Thinking nostalgically about an out-group interaction may foster self-efficacy in reference to the out-group and enhance confidence in handling intergroup encounters, even those characterized by conflict (Abeyta, Routledge, & Juhl, 2015). Consequently, it has great potential to advance intergroup relations. In summary, provided group membership is salient (Brown & Hewstone, 2005), social connectedness will likely culminate in inclusion in the self not just of the out-group member involved in the interaction but, importantly, of the entire out-group, with downstream benefits for intergroup relations. For example, White participants who include in the self a South Asian individual hold more positive attitudes towards South Asians in general (Turner, Hewstone, Voci, & Vonofakou, 2008).

Evidence for such a link between nostalgia and out-group attitudes has been found in two other intergroup contexts. Nostalgic reflection on an encounter with an overweight person (an out-group member) creates more positive attitudes towards overweight persons in general by prompting the inclusion of overweight persons in the self, increasing trust in the out-group, and lowering intergroup anxiety (Turner, Wildschut, & Sedikides, 2012). Also, nostalgic reflection on an encounter with a mentally ill person (again, an out-group member) engenders a more positive out-group attitude by enhancing inclusion of mentally ill persons in the self and building out-group trust (Turner, Wildschut, Sedikides, & Gheorghiu, 2013).

Overview

The research we report in this article extends substantively the above theory and findings. In Experiment 1, we tested whether nostalgia reduces ageism via inclusion in the self of the out-group *older adults*. In Experiment 2, we enriched these ideas by proposing and testing a serial mediational model wherein nostalgia increases social connectedness, which is linked with greater inclusion of older adults in the self (IOGS), which in turn is related to more favourable out-group attitudes. Specifically, we examined whether this mediational pathway (i.e., higher social connectedness ⇒ greater IOGS) is associated with less of a tendency for young people to avoid older adults. Finally, we ruled out several alternative explanations for the findings, namely, demand characteristics, positivity of the recalled encounter, and perceived positivity and typicality of the older adult with whom participants had the recalled encounter.

Experiment 1

As we have argued, nostalgia is a social emotion (Van Dijke, Wildschut, Leunissen, & Sedikides, 2015;

Wildschut, Sedikides, Routledge, Arndt, & Cordaro, 2010). It entails sociality and begets sociality. Nostalgic narratives prominently feature close others, and nostalgic reverie strengthens social connectedness. As such, we assume that nostalgia, by virtue of its sociality, would constitute a basis for greater inclusion of the out-group in the self (Sassenberg & Matschke, 2010; Smith, Coats, & Walling, 1999; Tropp & Wright, 2001). In particular, when the group membership of an out-group member is salient, nostalgia-induced social connectedness to this member may result in the inclusion of the entire out-group in the self (Brown & Hewstone, 2005). This entails that the out-group becomes part of one's identity, perspectives, and resources (Aron et al., 2004; Tropp & Wright, 2001). For example, closeness of friendship with an out-group member precipitates inclusion of the relevant group in the self (Turner et al., 2008; Turner, West, & Christie, 2013; Wright, Aron, McLaughlin-Volpe, & Ropp, 1997).

In Experiment 1, participants brought to mind an encounter with an older adult. For half of them, this encounter constituted a nostalgic recollection, for the other half a neutral autobiographical recollection. We hypothesize that nostalgia (relative to control) will strengthen inclusion of the entire out-group (i.e., older adults) in the self (nostalgia ⇒ IOGS). IOGS, in turn, will be associated with a more positive attitude towards the out-group (nostalgia ⇒ IOGS ⇒ positive out-group attitude).

Method

Participants. We tested 70 University of Leeds undergraduates (45 females and 25 males), aged between 18 and 20 years ($M = 19.2$, $SD = 0.77$). The experiment was reviewed and approved by the departmental psychology ethics committee. All participants provided written informed consent. We randomly assigned participants to the experimental conditions: nostalgia ($n = 35$) and control ($n = 35$).

Procedure. We seated participants in private booths and proceeded with instructions modelled after Wildschut et al. (2006). In the *nostalgia condition*, participants read the following:

'*According to The Oxford Dictionary, "nostalgia" is defined as a "sentimental longing for the past." Please bring to mind a nostalgic event in your life that involved interacting with an older adult. Specifically, try to think of a past event involving an older adult that makes you feel most nostalgic. Now we would like you to spend five minutes imagining that you are back at this nostalgic event. Try and immerse yourself into this nostalgic event, remembering what it was like and how you felt at the time you interacted with the older adult.*'

In the *control condition*, participants read the following:

'*This is a study on autobiographical memory—that is, on your memory about your past. Please bring to mind an ordinary event in your life that involved interacting with an older adult. Specifically, try to think of a past event involving an older adult that is ordinary. ... Now we would like you to spend five minutes imagining that you are back at this event. Try and immerse yourself into this autobiographical event, remembering exactly what happened at the time you interacted with the older adult.*'

Next, participants in both conditions wrote a description of the relevant event and completed a manipulation check and the various measures (mediator and dependent measure).

Measures

Manipulation check. Participants responded to two items (Wildschut et al., 2006): 'Right now, I am feeling quite nostalgic' and 'I feel nostalgic at the moment' (1 = *strongly disagree*, 6 = *strongly agree*; α = .92). We averaged the items to create a nostalgia index.

Hypothesized mediator: IOGS. Participants indicated how close they felt to the group of older adults by choosing one of seven Venn diagrams. Each diagram included two circles with varying degrees of overlap, from no overlap (i.e., separate circles) to almost complete overlap (Aron, Aron, & Smollan, 1992). We informed participants that one of the circles in each diagram represented themselves and the other represented all older adults in general. The greater the overlap between the circles, the stronger the IOGS (and the higher the score on a scale of 1–7).

Dependent measure: out-group attitudes. Participants received the following instructions: 'Please indicate how you feel about older adults right now. For each of the following scales, circle the number that best reflects how you feel.' They were then presented with four semantic differential items from the general out-group attitude measure of Wright et al. (1997): warm–cold, positive–negative, friendly–hostile, and respect–contempt (7-point scale; α = .92). We averaged the items to create an index of out-group attitudes. Higher scores indicated more favourable attitudes.

Results

We present correlations among all measured variables in Table 1.

Manipulation check. As intended, participants reported being more nostalgic in the nostalgia condition ($M = 4.84$, $SD = 0.98$) than in the control ($M = 4.17$, $SD = 1.29$) condition, $F(1, 68) = 6.00$, $p = .017$, $d = 0.59$.

Hypothesized mediator: IOGS. We hypothesized that nostalgia would strengthen inclusion of the out-

Table 1 Means, standard deviations, and correlations between variables in Experiment 1

	M (SD)	1	2	3	4
1. Nostalgia vs. control	—	—			
2. Manipulation check	4.51 (1.19)	.29*	—		
3. IOGS	3.33 (1.27)	.28*	.30*	—	
4. Out-group attitude	5.69 (0.83)	.25*	.24*	.51***	—

N = 90. IOGS = inclusion of older adults in the self.
*p < .05;
***p < .001.

group 'older adults' in the self. Indeed, nostalgic participants ($M = 3.69$, $SD = 1.23$) reported stronger IOGS than did control participants ($M = 2.97$, $SD = 1.22$), $F(1, 68) = 5.92$, $p = .018$, $d = 0.59$.

Dependent measure: out-group attitudes. We hypothesized that nostalgia would improve out-group attitudes. In support of the hypothesis, nostalgic participants ($M = 5.90$, $SD = 0.74$) evaluated the out-group more favourably than did control participants ($M = 5.49$, $SD = 0.87$), $F(1, 68) = 4.58$, $p = .036$, $d = 0.52$.

Mediational analyses. We hypothesized that inclusion of the out-group in the self would mediate the effect of nostalgia on out-group attitude (nostalgia ⇒ IOGS ⇒ positive out-group attitude). We conducted a mediational analysis, in which we contrast-coded the independent variable (-1 = control, 1 = nostalgia). As mentioned above, nostalgic (compared to control) participants manifested stronger IOGS, β = .28, $t(68) = 2.43$, $p = .018$. The relation between IOGS and out-group attitude, while controlling for condition, was also significant, β = .48, $t(67) = 4.37$, $p < .001$. When IOGS (i.e., the mediator) was controlled for, the relation between condition and out-group attitude became nonsignificant, β = .12, $t(67) = 1.07$, $p = .29$. We used the PROCESS macro (Hayes, 2013; Model 4; 5000 bootstrap samples) to test the indirect effect (denoted as *ab*) of nostalgia on out-group attitude via IOGS. The indirect effect was significantly different from 0 (*ab* = .22, 95% CI [0.001, 0.43]), further supporting the mediational model.

Discussion

Consistent with the hypotheses, nostalgia improved attitudes towards the group older adults, an effect that was mediated by stronger IOGS. Nevertheless, these findings are preliminary and thus in need of replication. It is also necessary to address potential limitations. Tasks involving nostalgic recollection are amenable to criticism. Participants were given a definition of nostalgia and asked to recall a nostalgic event or were given no such definition and asked to recall an ordinary autobiographical event. Participants may have responded based on their expectation about how they thought nostalgia should feel rather than how it actually made them feel (i.e., demand characteristics).

Additionally, following previous research (Wildschut et al., 2006, 2010; Zhou et al., 2008), participants completed an assessment of state nostalgia (e.g., 'Right now, I am feeling quite nostalgic') immediately following the manipulation. The timing and phrasing of this manipulation check may have introduced experimental demand. Specifically, participants instructed to recall a nostalgic event may have felt compelled to endorse the manipulation check items even when they did not experience nostalgia. Furthermore, participants in the nostalgia (vs. control) condition may be inclined to bring to mind an encounter with a more likeable and atypical person or recall a more positive encounter. If so, changes in out-group attitudes may simply be due to these between-condition differences. Finally, we assumed that nostalgia increases IOGS by virtue of its capacity to strengthen social connectedness. However, we did not assess social connectedness and therefore could not substantiate this idea.

Experiment 2

Experiment 2 aimed to replicate our initial findings while addressing methodological limitations and extending understanding of how and why nostalgia combats ageism. First, we used a subtler nostalgia induction developed by Hepper et al. (2012). These authors asked participants to generate words associated with nostalgia, which were coded into superordinate features. Another sample of participants rated the prototypicality of these features for 'nostalgia'. On the basis of these ratings, Hepper et al. classified the features as central (e.g., memories, relationships, longing, missing, and wanting to return to the past) or peripheral (e.g., daydreaming, wishing, comfort and warmth, loneliness, and sadness) to nostalgia. In a follow-up study, participants who recalled an event involving the central (vs. peripheral) features subsequently reported greater nostalgia, and, in line with other findings (Wildschut et al., 2006; Zhou et al., 2008), stronger social connectedness. One of the main advantages of this prototype-based method is that it removes demand characteristics by eliminating participants' expectations about how nostalgia should feel. Moreover, it does not require knowledge of the meaning of the word *nostalgia*, and so participants in the experimental condition do not need, as in Experiment 1, to receive a definition of the term. We adapted this technique to induce nostalgia in an intergroup context and determine its prejudice-reducing function in relation to older adults. To eliminate the potential demand characteristics introduced by the manipulation check, we coded participants' written narratives for intensity of expressed nostalgia.

Second, in order to rule out the role of liking and typicality of the selected out-group member, we instructed participants to identify an out-group member prior to the manipulation (i.e., nostalgic vs. control encounters). Thus, the manipulation could not influence the positivity and typicality of the selected out-group member. To confirm this, we also assessed liking and typicality of the selected out-group member. Lastly, we coded participants' written narratives for expressions of positive emotionality.

Third, we included several new measures. We extended our initial findings by focusing on the behavioural component of attitudes towards older adults. Nostalgia strengthens approach motivation and behaviour, as reflected in reduced seating distance, greater self-efficacy and optimism regarding the success of social interactions, stronger intentions to reconnect with friends, and increased helping behaviour (Abeyta, Routledge, & Juhl, 2015; Stephan et al., 2014). In the context of nostalgic reflection about an encounter with an older adult, we expect that participants will manifest a decreased desire to avoid (and, by implication, an increased desire to approach) older adults. We also directly measured social connectedness, which we consider vital in accounting for the effects of nostalgia on ageism. In particular, we propose that, by fostering social connectedness and ensuing IOGS, nostalgia will reduce out-group avoidance.

We therefore hypothesized and tested a serial multiple-mediator model. We propose that nostalgic recall of a past encounter with an older adult will foster social connectedness (nostalgia ⇒ social connectedness). Assuming the salience of the group membership of the older adult during the recall task, social connectedness will come to encompass the entire category of older adults, which will lead to greater IOGS (nostalgia ⇒ social connectedness ⇒ IOGS). IOGS will in turn attenuate the tendency to avoid older adults (nostalgia ⇒ social connectedness ⇒ IOGS ⇒ reduced avoidance).

Method

Participants. We tested 90 undergraduates. Fifty-two were from the University of Southampton (41 females and eight males, aged between 20 and 25 years, $M = 21.02$, $SD = 1.28$; three participants did not report their gender) and 38 were from Queen's University Belfast (33 females and five males, aged between 18 and 35 years, $M = 21.47$, $SD = 4.85$). The experiment was reviewed and approved by the respective departmental psychology ethics committees. All participants provided written informed consent. We randomly assigned them to the central ($n = 45$) or peripheral ($n = 45$) nostalgia conditions.

Procedure. Participants read the following instructions: 'We are going to ask you to recall an interaction with someone you know. We would like you to bring to mind an *older adult*, someone who is over the age of 65. We would like you to choose someone you know well. This could be a (present or former) acquaintance, friend, partner, or family member.' After writing down the name of this older adult, participants read the following: 'Below are listed several features

that might describe or characterise experiences and memories that we have in our lives. Please take a minute or two to read through the features.'

Subsequently, we randomly assigned participants to the conditions. In the *central features (nostalgia) condition*, participants received the following words: reminiscence, keepsakes, dwelling, rose-tinted memories, familiar smells, wanting to return to the past, family/friends, longing, feeling happy, childhood, emotions, and personal. In the *peripheral features (control) condition*, participants received the following words: daydreaming, anxiety/pain, wishing, achievements, regret, feeling, warm/comforted, loneliness, bittersweet, feeling sad, change, ageing, and bad memories.

All participants then read the following:

'Now please bring to mind an event in your life that involved interacting with the person whom you identified on the previous page which is relevant to or characterised by at least five of these features. Specifically, try to think of a past event whereby at least five of the features either were part of the event, and/or describe your experience as you think about the event. This event can be a recent experience or it could relate back to the earlier years of your life. Circle all of the features above that are relevant to this event (at least five). Now we would like you to spend five minutes imagining that you are back at this event. Try and immerse yourself into this event, trying to remember exactly what happened at the time you interacted with the person you identified on the previous page.'

Finally, participants wrote a description of the event and completed the various measures (mediators, dependent measure, and alternative explanation measures).

Measures

Putative mediator: social connectedness. Participants indicated their agreement with the following four items, preceded by the stem 'Thinking about my interaction with the person on the recall task': '…makes me feel connected to loved ones', '…makes me feel protected', '…makes me feel loved', and '…makes me feel I can trust others' (1 = *strongly disagree*, 6 = *strongly agree*; α = .91; Hepper et al., 2012). We averaged the items to create a social connectedness index.

Putative mediator: IOGS. We used the same measure as in Experiment 1.

Dependent measure: out-group avoidance tendency. We assessed behavioural tendencies towards older adults in two ways. First, we used items developed by Mackie, Devos, and Smith (2000) to assess approach and avoidance action tendencies. We assessed approach with three items, preceded by the stem 'Right now, when thinking of older adults…': 'I want to talk to them', 'I want to find out more about them', and 'I want to spend time with them' (α = .86). We assessed avoidance with the items 'I want to avoid them', 'I want

to keep them at a distance', and 'I want to have nothing to do with them' (α = .92). Participants rated the items on a 9-point scale (1 = *not at all*, 9 = *very much*). The approach and avoidance components were strongly and negatively correlated (*r* = −.58, *p* < .001). We therefore averaged the avoidance and approach (reversed) scores to create a six-item index of avoidance action tendencies.

Second, we used the avoidance subscale of the Fraboni Scale of Ageism (Fraboni, Saltstone, & Hughes, 1990). Participants rated their agreement or disagreement with eight statements on a 6-point scale (e.g., 'I sometimes avoid eye contact with old people when I see them', 'I don't like it when old people try to make conversation with me', and 'I personally would not want to spend much time with an old person'; 1 = *strongly disagree*, 6 = *strongly agree*; α = .82). The two measures (avoidance action tendencies and the avoidance Fraboni Scale of Ageism subscale) were strongly correlated (*r* = .64, *p* < .001). We therefore standardized both scales (*z*-scores) to create a common metric and then averaged them to form an overall index of avoidance action tendencies in relation to older adults. Separate analyses of the two measures produced identical results.

Measures relating to alternative explanations
Typicality of the selected out-group member. Participants responded to two items: 'How typical do you think this person is of older adults in general' and 'How representative do you think this person is of older people in general' (1 = *not at all*, 7 = *very much*; α = .91).

Positivity of the selected out-group member. Participants responded to two items: 'How much do you like this individual' (1 = *not at all*, 7 = *very much*) and 'How positive is your attitude towards this individual' (1 = *not at all positive*, 7 = *very positive*; α = .90).

Positivity of the encounter. We content-analysed participants' written narratives with the Linguistic Inquiry and Word Count (LIWC) software program (Pennebaker, Chung, Ireland, Gonzales, & Booth, 2007). LIWC offers a validated method for measuring verbal expression of emotion (Kahn, Tobin, Massey, & Anderson, 2007). We used the program to calculate the percentage of positive (e.g., happy, love, and joy) emotion words per narrative (denoted by LIWC as POSEMO).

Manipulation check. Given that LIWC does not yield a nostalgia score, a human coder (unaware of conditions) coded participants' written narratives for the intensity of expressed nostalgia ('How much nostalgia did the person who wrote this narrative experience?'; 1 = *very little*, 7 = *very much*). To confirm reliability, a second coder coded a subset of the narratives (20%). Responses across the two coders were reliable (α = .78).

Results

We present correlations among all measured variables in Table 2.

Manipulation check. As intended, narratives written by participants in the central features (nostalgia) condition ($M = 5.40$, $SD = 1.81$) expressed higher levels of nostalgia than narratives written by participants in the peripheral features (control) condition ($M = 2.58$, $SD = 1.99$), $F(1, 88) = 49.66$, $p < .001$, $d = 1.48$. This manipulation check did not rely on self-report yet provided evidence for the validity of the manipulation.

Measures

Putative mediator: social connectedness. As hypothesised, participants in the nostalgia condition ($M = 4.93$, $SD = 0.81$) reported greater social connectedness relative to those in the control condition ($M = 4.14$, $SD = 1.46$), $F(1, 88) = 9.88$, $p = .002$, $d = 0.67$.

Putative mediator: IOGS. As hypothesized, and in replication of Experiment 1, nostalgic ($M = 4.31$, $SD = 1.60$) relative to control ($M = 3.51$, $SD = 1.63$) participants evinced greater inclusion of older adults in the self, $F(1, 88) = 5.49$, $p = .021$, $d = 0.50$.

Dependent measure: out-group avoidance. Consistent with the hypothesis, nostalgic participants ($M = -0.25$, $SD = 0.80$) manifested a weaker avoidance orientation than did control participants ($M = 0.25$, $SD = 0.95$), $F(1, 88) = 7.34$, $p = .008$, $d = 0.57$.

Measures testing alternative explanations. To rule out the possibility that participants in the nostalgia (vs. control) condition are inclined to bring to mind an encounter with a more likeable and a more atypical person, we assessed liking and typicality of the selected out-group member.

Typicality of the selected out-group member. Nostalgic ($M = 4.61$, $SD = 1.53$) and control ($M = 4.66$, $SD = 1.55$) participants did not differ significantly in their typicality ratings for the selected out-group member, $F(1, 87) = 0.02$, $p = .884$, $d = 0.03$.

Positivity of the selected out-group member. Nostalgic ($M = 6.56$, $SD = 0.71$) and control ($M = 6.33$, $SD = 1.01$) participants did not differ significantly in their positivity ratings for the selected out-group member, $F(1, 87) = 1.51$, $p = .223$, $d = 0.27$.

Positivity of the interaction. Analysis of the LIWC POSEMO scores revealed that nostalgic narratives ($M = 3.99$, $SD = 3.18$) included a greater percentage of positive emotion words than did control narratives ($M = 2.69$, $SD = 2.84$), $F(1, 88) = 4.23$, $p = .043$, $d = 0.43$. Nostalgic participants (compared to controls) expressed more positive emotionality.

Mediational analyses. We tested a serial mediation model: nostalgia ⇒ social connectedness ⇒ IOGS ⇒ reduced avoidance. We present tests of the individual links in this model in Table 3. Given that there were significantly more expressions of positive emotionality in nostalgic (compared to control) narratives, we controlled for this variable in the analyses undertaken. Results supported each link in the model: (1) nostalgia increased social connectedness; (2) social connectedness was associated with higher IOGS (over and above nostalgia); and (3) IOGS was negatively associated with out-group avoidance (over and above nostalgia and social connectedness). We then used the PROCESS macro (Hayes, 2013; Model 6; 5000 bootstrap samples) to test the serial indirect effect of nostalgia, through social connectedness and IOGS, on out-group avoidance. The serial indirect effect (denoted as *ab*) was significantly different from 0 ($ab = -.05$, 95% CI [-0.121, -0.014]), further supporting our serial multiple-mediator model.

We also tested an alternative serial multiple-mediator model, in which the order of the two mediators was reversed: nostalgia ⇒ IOGS ⇒ social connectedness ⇒ reduced avoidance. Results did not support the final link in this model: social connectedness did not significantly predict out-group avoidance (over and above nostalgia and IOGS; Table 3). Furthermore, the serial indirect

Table 2 Means, standard deviations, and correlations between variables in Experiment 2

	M (SD)	1	2	3	4	5	6	7	8
1. Nostalgia vs. control	—	—							
2. Manipulation check	3.99 (2.36)	.60***	—						
3. Social connectedness	4.54 (1.24)	.32**	.47***	—					
4. IOGS	3.92 (1.66)	.24*	.28**	.41***	—				
5. Out-group avoidance	0.00 (0.91)	−.28**	−.19†	−.41***	−.62***	—			
6. Typicality out-group member	4.62 (1.53)	−.02	−.06	.18	.15	−.39***	—		
7. Positivity out-group member	6.44 (.87)	.13	.13	.34***	.34***	−.43***	.22*	—	
8. Positive emotionality	3.32 (3.06)	.21*	.47***	.33**	.09	−.07	−.07	−.08	—

$N = 90$. IOGS = inclusion of older adults in the self.
†$p < .10$;
*$p < .05$;
**$p < .01$;
***$p < .001$.

Table 3 Linear regression analyses testing links in the serial multiple-mediator model in Experiment 2

| | Outcome | | | | | |
| | Social connectedness | | IOGS | | Avoidance | |
Predictor	β	p	β	p	β	p
Nostalgia	**.26**	**.011**	.13	.203	−.10	.238
Social connectedness			**.39**	**<.001**	−.18	.066
IOGS					**−.53**	**<.001**
Positive emotionality	.27	.009	−.06	.539	.06	.509

Note: Nostalgia was coded as follows: −1 = peripheral (control), 1 = central (nostalgia). Links in the serial multiple-mediator model are presented in boldface. $N = 90$. IOGS = inclusion of older adults in the self.

effect was not significantly different from 0 ($ab = -.01$, 95% CI [−0.055, 0.0004]). The alternative model received no support.

Taken together, we obtained evidence for the idea that nostalgia reduces out-group avoidance via an extended mediational chain. Nostalgia fosters social connectedness, which is associated with greater IOGS. In turn, IOGS is associated with lower levels of out-group avoidance. Importantly, these findings emerged while controlling for positivity of the recalled encounter.

Discussion

In Experiment 2, we clarified and extended conceptually the findings of Experiment 1. The results were consistent with the proposed theoretical model. Nostalgia about a past encounter with an older adult fostered social connectedness, which was associated with higher IOGS. In turn, raised IOGS was associated with reduced avoidance of older adults. Also, we ruled out several alternative explanations. Given that participants brought to mind an older adult prior to the nostalgia induction, the nostalgia induction could not (and did not) influence the perceived positivity or typicality of that older adult. Moreover, nostalgic (compared to control) narratives included a greater proportion of positive emotions, yet the indirect effect of nostalgia on out-group avoidance, via the proposed mediators, emerged while controlling for positive emotionality. Finally, the use of a subtler manipulation of nostalgia and a subtler manipulation check allowed us to address demand characteristics.

General Discussion

Summary of findings

Participants reflected on a past encounter with an older adult. We manipulated reflection in two ways. In Experiment 1, participants recalled a nostalgic versus ordinary encounter (Wildschut et al., 2006). In Experiment 2, participants used central versus peripheral features of the nostalgia construct (Hepper et al., 2012) to describe a recalled encounter. Regardless of manipulation, participants who reflected

nostalgically on an interaction with an older adult displayed more positive attitudes towards older adults.

We aimed to identify mechanisms underlying this effect. In Experiment 1, younger participants who engaged in nostalgia about an encounter with an older adult (compared to controls) were more likely to perceive a cognitive overlap between themselves and the group of older adults (IOGS). This, in turn, was associated with a more positive attitude towards older adults. In Experiment 2, younger participants who waxed nostalgic about an encounter with an older adult (compared to controls) felt more socially connected in general. Subsequently, social connectedness was associated with greater IOGS. In turn, IOGS was associated with reduced avoidance of older adults.

We recognize that our mediation analyses cannot show causality (Fiedler, Schott, & Meiser, 2011). However, these analyses are informative, because they put our hypotheses at risk. Failure of even a single link in the mediational chain would have undermined our model. Yet, each proposed link held.

Implications and directions for future research

Our findings support the idea that nostalgia can be implemented to curtail prejudice (Cheung, Sedikides, & Wildschut, 2017) by setting into action an interpersonal psychological mechanism, creating heightened social connectedness, which is then associated with positive intergroup outcomes. The approach orientation activated by heightened social connectedness (Stephan et al., 2014) opens individuals up to the possibility of relationships with others, including members of other groups, and is linked to greater inclusion of the out-group (i.e., older adults) in the self. When individuals include another group in the self, they spontaneously treat members of that group like the self; that is, they perceive them favourably (Aron et al., 2004).

Arguably, nostalgia is easier to implement and sustain than actual intergroup contact (Pettigrew & Tropp, 2006). The same holds for imagined intergroup contact, where participants who imagine a social interaction with an out-group member express more favourable out-group attitudes than do controls (Crisp & Turner, 2009, 2012; Turner et al., 2008). However, in contrast to the present work, prior research has not relied on

autobiographical memories as a source of imagined contact. The current findings contribute insights into how imagined contact interventions may be put into practice successfully. This could be accomplished by building on the known propensity for most individuals to nostalgize on a regular basis (i.e., several times a week; Wildschut et al., 2006) and by mining the rich deposits of nostalgic memories that undoubtedly involve out-group members. To be precise, drawing on nostalgic memories may augment imagined contact for three reasons: (1) individuals engage spontaneously and frequently in nostalgic reverie and thus do not require extensive training; (2) nostalgic memories are rich in vivid detail and affective content; and (3) nostalgia is a predominantly positive emotion, which may promote adherence to and maintenance of imagined contact interventions.

Building also upon accumulated evidence that nostalgia nurtures positive attitudes about future encounters with stigmatized out-group members (Turner et al., 2012; Turner, Wildschut, et al., 2013), future research could address whether these behavioural tendencies translate into actual behaviour. For example, do participants behave in a friendlier manner towards older adults during social interactions, following nostalgic reverie? Such behaviour is likely, given that nostalgia fosters self-efficacy about social relationships, thus motivating the pursuit of relationship goals (Abeyta, Routledge, & Juhl, 2015) including intergroup encounters. Moreover, as social psychological theory and research suggests that self-efficacy or confidence in contact can strengthen intergroup relations by lowering intergroup anxiety (Turner & Cameron, 2016), future investigations would do well to test whether nostalgia promotes positive intergroup attitudes and behaviours by fostering self-efficacy about social interactions in general, and intergroup interactions in particular, in turn decreasing intergroup anxiety.

Participants engaged in nostalgic recollection of an intergroup encounter. However, if nostalgia curbs ageism by making people feel more confident and self-efficacious about interacting with others (Abeyta, Routledge, & Juhl, 2015) or by dampening existential threat (Juhl, Routledge, Arndt, Sedikides, & Wildschut, 2010; Routledge, Arndt, Sedikides, & Wildschut, 2008), then perhaps nostalgia alone is sufficient to change out-group perceptions. Such a possibility would simplify the interventional scope, as it would render nostalgic recall of a personally experienced encounter obsolete. It would also deal with a limitation of nostalgic recall of an intergroup encounter: that one would need to have had opportunity for a contact encounter with an out-group member in order to benefit. Alternatively, given that interventions involving contact are powerful means of influencing intergroup relations (Turner et al., 2007; Turner, West, et al., 2013), perhaps it is the combination of nostalgia and recalling past contact with a specific out-group member that constitutes the vital ingredient for intervention effectiveness. These

issues can be addressed by comparing nostalgia of past contact with a specific out-group with nostalgia in its own right.

Might the effectiveness of nostalgia as an anti-ageism intervention vary among age groups? On the one hand, the ego-protective motivation to display ageism (Greenberg et al., 1986, 2002; Martens et al., 2005) might be particularly strong in individuals who are close to joining the older adult group, making attitude change via nostalgia harder to achieve (Nelson, 2005; Snyder & Meine, 1994). On the other hand, with advancing age, an individual may have a greater pool of nostalgic memories to draw on and therefore might be more likely to benefit from a nostalgia intervention. To complicate matters, older adults might show ageism towards younger adults. Thus, mirror-image interventions should compare two groups of older adults varying in age (e.g., in their 80s vs. 60s) to find out for which group nostalgic reminiscing about an encounter with a younger adult is more effective.

Limitations

Our research has several limitations, which we consider next. First, participants did not have especially negative attitudes towards older adults to begin with. We argue that the observed shift in attitudes and behavioural tendencies does represent a meaningful change in perceptions of older adults that could be relevant regardless of one's initial attitudes. Nonetheless, future research should test the efficacy of nostalgic recollections among participants with more (vs. less) negative initial attitudes towards older adults.

Second, we tested nostalgia as a means of reducing ageism in the laboratory, with dependent measures assessed immediately following the nostalgia manipulation. However, in order to establish nostalgia as a potent interventional force in applied settings (e.g., schools or workplaces), one would need to demonstrate a longer-term effect. Evaluations of interventions to promote constructive intergroup relations often show that repeated exposure to a manipulation yields effects that last between a month and a year (Cameron et al., 2011; Vezzali, Capozza, Giovannini, & Stathi, 2011; White & Abu-Rayya, 2012). Thus, one would need to expose younger participants repeatedly to relevant nostalgic recollection and include both immediate and delayed examinations of its impact on behaviour towards older adults.

Third, participants in the central features nostalgia condition of Experiment 2 recalled encounters characterized by a greater proportion of positive emotional content compared to participants in the peripheral features nostalgia condition. It was therefore crucial to show that nostalgia has a unique effect on out-group perceptions over and above positive emotionality. To do so, we controlled for positive emotional content when testing our serial mediation model. Supporting our hypotheses and showcasing the unique role of nostalgia, we found an indirect effect

on out-group avoidance (via social connectedness and IOGS). More generally, though, our manipulations had shortcomings: In Experiment 1, the manipulation (e.g., nostalgia instructions) was explicit, whereas, in Experiment 2, the experimenter-provided central features of nostalgia could be considered more positive than the peripheral features of nostalgia. Nevertheless, we endorse the logic of converging operations, according to which experiments with different manipulations draw strength from each other, thereby offsetting their idiosyncratic limitations (Campbell & Fiske, 1959).

Fourth, we acknowledge an alternative explanation for our findings, derived from terror management theory (Greenberg et al., 1986). One reason why humans may engage in ageism is to assuage awareness of their mortality and alleviate their existential anxiety. Stereotyping or stigmatizing older adults helps younger people to distance themselves from their future self, thus allaying their existential anxiety (Martens et al., 2005; Nelson, 2005; Snyder & Meine, 1994). Intriguingly, ageism related to existential anxiety can promote sensation-seeking and risky behaviours, as ageist individuals attempt to buffer awareness of their mortality by making themselves feel strong, energetic, and invulnerable (Levy & Myers, 2004; Popham, Kennison, & Bradley, 2011a, 2011b). Consistent with this possibility, younger adults who have close positive relationships with older adults hold less negative attitudes about ageing and also engage in less risk taking in everyday life (Kennison & Ponce-Garcia, 2012). If so, ageism may have been reduced in our nostalgia conditions, because nostalgia about an encounter with an older adult buffered participants from existential threat. However, in Experiment 2, we controlled for positivity of the selected out-group member as well as positivity of the encounter and found no differences between the nostalgia condition (i.e., central features of nostalgia) and the control condition (i.e., peripheral features of nostalgia).

We demonstrated a pathway through which nostalgia curtails ageism (i.e., social connectedness ⇒ greater inclusion of the out-group in the self). Also, nostalgic recollection of past encounters decreases other forms of prejudice that are less likely to be associated with terror management, such as weight stigma and mental health stigma (Turner et al., 2012; Turner, Wildschut, et al., 2013), although arguably any kind of prejudice may help to protect one's worldview and thus lower existential anxiety (Greenberg & Kosloff, 2008). Regardless, nostalgia may be effective at reducing ageism via more than one pathway, and it is thus worthwhile testing the relative impact of these respective pathways.

In closing

Nostalgia does not simply represent an escape into the past. Instead, it has implications for the future, as it begets approach motivation (pursuit of desirable goals) rather than avoidance motivation (abandonment of desirable goals). Nostalgia fostered social connectedness and in turn strengthened inclusion of older adults in the self. This process increased the likelihood of approaching, rather than avoiding, older adults. The findings establish that nostalgia benefits not only interpersonal relationships but also society more generally as it contributes to the curtailment of ageism.

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