The Content of Nostalgic Memories Among People Living with Dementia

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Abstract

Although dementia may affect the reliability of autobiographical memories, the psychological properties of nostalgic memories may be preserved. We compared the content of nostalgic (n = 36) and ordinary (n = 31) narratives of 67 participants living with dementia. Narratives were rated according to their self-oriented, social, and existential properties, as well as their affective content. Social properties and affective content were assessed using a linguistic word count procedure. Compared to the ordinary narratives described in the control condition, nostalgic narratives described a typical events, expressed more positive affect, and had more expressions of self-esteem and self-continuity. They were also rated higher on companionship, connectedness and the closeness of relationships, and reflected life as being meaningful. Despite their cognitive impairment, people living with dementia experience nostalgia in similar ways to cognitively healthy adults, with their nostalgic narratives containing self-oriented, social, and existential properties.

Keywords

Alzheimer's disease, autobiographical memory, meaning in life, self-continuity, social connectedness, self-esteem

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Introduction

Nostalgia is defined as a "sentimental longing or wistful affection for the past" (The New Oxford Dictionary of English, 1998, p. 1266). Nostalgic recollections refer to momentous and atypical events in one's life, such as anniversary celebrations, graduations, or holidays. These events are personally meaningful and almost always shared with close others (e.g., family members, friends, romantic partners). When nostalgizing, a person feels content, comforted, and often joyful, but also experiences a tinge of yearning or sadness for the irrevocability of the valued events; as such nostalgia is a bittersweet emotion, albeit more sweet than bitter (Leunissen et al., 2021; Sedikides & Wildschut, 2016). The emotion occurs frequently (e.g., several times a week; Hepper et al., 2021; Wildschut et al., 2006), across all age groups (Hepper et al., 2021; Juhl et al., 2020), and across cultures (Hepper et al., 2014; Sedikides et al., 2016).

In all, nostalgia is a self-relevant and social emotion, with existential overtones (Sedikides & Wildschut, 2018, 2019; Sedikides et al., 2015). Research on healthy adults has relied, in part, on coding narratives of nostalgic events and narratives of ordinary autobiographical (control) events to demonstrate this tripartite structure (i.e., being self-oriented, social, and existential). The self-oriented property is captured by the relatively high presence of references to self-esteem (Brown & Humphreys, 2002; Wildschut et al., 2006), self-continuity (i.e., sense of continuity between one's past and present selves; Milligan, 2003), and optimism (Cheung et al., 2013) in nostalgic narratives. The social property is captured by the greater presence in nostalgia narratives of first-person plural pronouns (e.g., "we," "us," "ours") and social words representing figures from one's past (e.g., "mother," "father," "friend"), as well as more references to interacting with these figures, to being connected with them, and to companionship or belongingness (Abeyta et al., 2015; Madoglou et al., 2017; Wildschut et al., 2006, 2018). The existential property is captured by more frequent references to meaning in life in nostalgia narratives (Davis, 1979; Wilson, 2005). We note that coding also captures the ambivalent, albeit mostly positive, character of nostalgia. When juxtaposed to control narratives, nostalgic narratives contain more references to positive than to negative affect (Madoglou et al., 2017; Stephan et al., 2012; Wildschut et al., 2006, 2018). In this article we ask whether nostalgia's tripartite structure is also evident among people living with dementia.

Nostalgia and Dementia

The term 'dementia' describes a neurodegenerative syndrome caused by a disease to the brain such as Alzheimer's disease, vascular dementia, and frontal-temporal dementia. The consequences of dementia are predominantly psychological (British Psychological Society, 2016; Livingston et al., 2005), and involve the disturbance of multiple higher cortical functions, including comprehension, learning capacity, language and judgment (World Health Organization, 1992). Although the precise neurological profile may vary, most forms of dementia progressively reduce a person's

ability to recall autobiographical memories accurately and reliably. For example, at some point in their condition, people with dementia will experience a combination of anterograde amnesia (i.e., inability to form new memories) and retrograde amnesia (i.e., difficulty in recalling old memories), as a result of damage to the hippocampus and temporal lobes. These structural changes limit access to autobiographical memories (Morris & Mograbi, 2013), decrease a person's capacity to update their self-knowledge (Addis & Tippett, 2004; Klein et al., 2003), and, by implication, diminish their sense of self (El Haj, Antoine, Nandrino, et al., 2015). Additionally, this neurological damage progressively confounds a person's abilities to define themselves in relation to important others (El Haj, Antoine, Nandrino, et al., 2015), to maintain a sense of connection between their past and present (Ben Malek et al., 2019; El Haj, Antoine, Nandrino, et al., 2015), and to anchor themselves within their life history.

This neurological damage, then, may weaken those cognitive abilities that are involved in the construction of autobiographical memories (Conway et al., 2004; Singer et al., 2013) and point toward the possibility that the tripartite structure of nostalgia is diminished among people living with dementia. However, autobiographical memories still appear to have an important function for people living with dementia. For example, people with Alzheimer's disease value reliving autobiographical memories (El Haj & Antoine, 2017), are able to retrieve such memories when they need to confirm that they are the same person they were before the dementia (El Haj et al., 2019), and experience the same emotions associated with these intrinsically personal memories (El Haj et al., 2016). These findings, then, are consistent with the possibility that the tripartite structure of nostalgic autobiographical memories continues to function for people living with dementia.

The Current Research

Although the neurological deterioration inherent in dementia inevitably impacts on cognitive functions that underpin autobiographical memory, it is unclear whether this impact degrades either the properties or the content of nostalgic autobiographical memories. We therefore tested whether the basic structure of nostalgia (i.e., being self-oriented, social, and existential) continues to be reflected in the narratives of individuals living with dementia. Specifically, we examined whether their nostalgic (vs. control) narratives would manifest more frequent references to (1) self-esteem, optimism, self-continuity (the self-oriented property), (2) companionship, connectedness to others, and relationship closeness (the social property), and (3) meaning in life (the existential property). We also examined whether the nostalgic and control narratives would differ on the relative presence of positive affect and negative affect. As a secondary objective, we attempted to delineate other aspects of the content of nostalgic (vs. control) narratives (as per research on healthy adults; Wildschut et al., 2006, 2018). In particular, we wanted to know whether nostalgic narratives were more or less likely than control narratives to describe a specific event, a period in the narrator's life, a place, or a person, refer to atypical events, and reflect an emotional episode.

Methodology

Participants

Participants were recruited from three sites: the RICE memory clinic in Bath; memory services under the Avon and WiltshireMental Health Partnership NHS Trust; and the Join Dementia Research Register. All participants had: (1) a diagnosis of either probable Alzheimer's disease (McKhann et al., 1984), probable vascular dementia (Román et al., 1993), dementia with Lewy bodies (McKeith, 2002), or a mixed form of these, with the diagnosis being made by a consultant psychiatrist or geriatrician within the previous 18 months; (2) mild or moderate levels of cognitive impairment as demonstrated, for example, by a score over 12 on the Montreal Cognitive Assessment (Nasreddine et al., 2005) screening tool; (3) the capacity to consent to be part of the research; and (4) sufficient communication skills to be able to take part. Participants were excluded if they had a history of pre-morbid psychiatric problems or a diagnosis of frontotemporal dementia (Snowden et al., 2002).

Design

We analyzed nostalgic and control narratives that were generated in two studies previously reported in Ismail et al. (2018, Studies 1 and 3), which used identical procedures. The protocols for both studies were registered, and all necessary ethical and site approvals obtained[1]. Both studies were parallel randomized controlled trials with two conditions (nostalgia, control) and an allocation ratio of 1:1. A sealed opaque envelope containing the case record form ensured that the experimenter was unaware of allocation until testing.

Experimental Manipulation

Following procedures validated with healthy adults (Sedikides et al., 2015), participants were instructed to recall either a nostalgic or an ordinary event from their lives. In the nostalgia condition, participants received the following instructions:

> "*According to the New Oxford English Dictionary, nostalgia is defined as a 'sentimental longing for the past.' Please bring to mind a nostalgic event in your life. Specifically, try to think of a past event that makes you feel most nostalgic. Bring this nostalgic experience to mind. Immerse yourself in the nostalgic experience. How does it make you feel? Please spend a couple of minutes thinking about how it makes you feel. Please describe this nostalgic event (i.e., describe the experience*)."

In the control condition, participants received the following instructions:

> "*According to the New Oxford English Dictionary, an ordinary event is 'an event with no special or distinctive features'. Please bring to mind an ordinary event in your life. Specifically, try to think of a past event that is ordinary. Bring this ordinary experience to mind. Immerse yourself in the ordinary experience. How does it make you feel? Please*

spend a couple of minutes thinking about how it makes you feel. Please describe this ordinary event (i.e., describe the experience)".

Nostalgia manipulation Check

To test whether the experimental manipulation had been effective in inducing higher levels of nostalgia in the nostalgia (than control) condition, participants were asked to respond to three statements (Ismail et al., 2018; Wildschut et al., 2006): "Right now, I am feeling quite nostalgic," "Right now, I am having nostalgic feelings," "I feel nostalgic at the moment" (1 = *strongly disagree*, 6 = *strongly agree*). Mean levels of nostalgia were significantly higher in the nostalgia ($M = 5.62$, $SD = 0.49$) than control ($M = 2.56$, $SD = 1.14$) condition, $t(39.34) = 13.94$, $p < .001$, $d = 3.42$. The experimental manipulation of nostalgia was therefore successful.

Cognitive Functioning, Anxiety, and Depression

Cognitive functioning was assessed with either the Clinical Dementia Rating Scale (CDR; Hughes et al., 1982) or the Addenbrooke Cognitive Evaluation or ACE III (Noone, 2015). Anxiety was assessed with the Geriatric Anxiety Inventory (GAI; Pachana et al., 2007), and depression with the 15-item version of the Geriatric Depression Scale (GDS; van Marwijk et al., 1995).

Data Collection, Recording and Transcription

Data were collected in face-to-face interviews between participants and either the first author, or a research assistant. After screening, 38 participants were randomized to the control condition and 41 to the nostalgia condition. One participant in each condition was then excluded, because they scored below the cut-off for cognitive functioning. Five participants in the control condition and four in the nostalgia condition declined to give consent for their memories to be recorded, while the recording of one participant in the control condition failed. Digital recordings were uploaded to a secure site before they were transcribed by a researcher and subsequently erased. The researcher transcribing the sessions was unaware of which condition each participant had been randomized.

Data Coding and Analytical Strategy

Descriptive data. In total we analyzed 31 narratives from the control condition, and 36 narratives from the nostalgia condition. We compared the nostalgia and control conditions on participant age, gender, anxiety, depression, cognitive functioning, diagnosis, and narrative word length. We analyzed categorical data using chi-square tests, and continuous ratings using independent samples *t*-tests.

    Content of nostalgic and control narratives. Narratives were analyzed using a coding scheme developed by Wildschut et al. (2018). We coded whether the narratives described (1) a specific event (e.g., "*it was at my daughter's wedding*"), (2) a period in the narrator's life (e.g., "*I found that work very interesting*"), (3) a place (e.g., "*we used*

to go to a beach in Cornwall"), (4) or a person (e.g., "*my father ... used to have a kind of game in the evening when he and I would play ball.*"). We further coded whether the narratives (1) involved atypical (e.g., weddings, holidays) versus routine (e.g., shopping, commuting) events, and (2) described an emotional (e.g., graduation, death of father) versus neutral (e.g., catching the bus, attending a Rotary lunch) event. More importantly, we coded the narratives in relation to their self-oriented, social, and existential properties (Table 1).

Two coders with experience in qualitative methods, who were unaware of participant allocation to conditions, independently rated all the transcripts. Coders made global ratings of narrative content while attempting to account for context and linguistic devices such as colloquial language, sarcasm, and homonyms. Inter-rater reliability, assessed with Cohen's kappa, ranged from 0.55 to 0.94. The coders resolved disagreements through discussion.

In addition to manually coding the narratives, we also examined their social property by subjecting transcripts to the Linguistic Inquiry and Word Count (LIWC; Pennebaker et al., 2015), an efficient and flexible method for studying the social content of verbal reports that has been used previously in the analyses of nostalgic narratives (Stephan et al., 2012; Wildschut et al., 2018). LIWC assigns the words in a text file to predefined linguistic categories, and then reports the frequency of each category as a percentage of the total words. For each narrative, up to 90 output variables can be produced. As well as taking into consideration the presence of verbs that suggest human interaction (e.g., talking, sharing), the social processes variable of LIWC includes four sub-categories, namely words relating to family (e.g., daughter, uncle), friends (e.g., buddy, neighbor), females (e.g., girl, her), and males (e.g., boy, his).

Further, we assessed the affective signature of nostalgic (compared to control) memories in two ways. First, following the procedure adopted by Wildschut et al. (2006, 2018), two coders rated the narratives along the 20 affective adjectives of the Positive and Negative Affect Schedule or PANAS (Watson et al., 1988), 10 of which express positive affect (e.g., "excited," "enthusiastic") and 10 negative affect (e.g., "distressed," "upset"). We excluded from the analyses three positive affect adjectives (attentive, interested, alert) and three negative affect adjectives (hostile, ashamed, afraid), due to low inter-coder reliability. Each narrative was rated for the remaining seven positive affect adjectives ($\alpha = 0.79$) and seven negative affect adjectives ($\alpha = 0.64$), on a 5-point scale (1 = *very slightly or not at all*, 5 = *extremely*). We combined ratings for positive affect and negative affect items into two corresponding indices. Secondly, we examined differences between the nostalgia and control conditions in the LIWC category of affective processes (Table 2). This includes words relating to positive emotions and negative emotions. Thus, each narrative was assigned both PANAS-derived and LIWC-derived positive and negative emotion scores (four scores total).

We analyzed the ratings and LIWC data using independent samples *t*-tests. When testing the effect of nostalgia (vs. control) on measures within a broader outcome category (e.g., self-oriented property), we adjusted the level of significance using the

Table 1. Coding of Narratives for Self-Oriented, Social and Existential Properties for Control and Nostalgic Narratives.

Domain (rating scale)	Definition and example from narrative rated at the highest point	Control (N = 31), mean (SD)	Nostalgia (N = 36), mean (SD)
Narratives exemplifying the self-oriented property of nostalgia			
Self-esteem (1 = none, 5 = very/ extremely)	Makes the participant feel a more valued, worthy person - for example, "We do raise an awful lot of money for mainly local charities. It makes me feel confident because I know people quite well … and it's just a nice, comfortable feeling I have and that's what lifts me if you like for another week" (a 75-year-old man with a diagnosis of Alzheimer's disease, allocated to the control condition)	1.55 (1.00)	2.36 (1.15)
Optimism (1 = none, 5 = very/extremely)	Makes the person feel good about the world and able to take on new challenges - for example, "Every school holiday I used to [go] to where granny lived and I just loved it, I loved my granny, she made fabulous, lovely old-fashioned food. We go and pick blackberries or blue berries or whatever and she will turn them into lovely tarts and things … And that I still think back on that as being so lovely, it was time when I felt safest, and now I'll always feel safest and happiest and away from any stress" (78-year-old man with vascular dementia, allocated to the control condition).	1.68 (0.87)	2.09 (1.04)
Self-continuity (1 = none, 4 = high)	The degree of connection between the narrator's past self and present self – for example, "Music has been a mainstay of my whole life really. So even if you are not marvelous at it. I always had a talent for music you see" (An 87-year-old woman with vascular dementia, allocated to the nostalgia condition).	1.68 (0.70)	2.67 (1.68)
Narratives exemplifying the social property of nostalgia			

(Continued)

Table 1. Continued

Domain (rating scale)	Definition and example from narrative rated at the highest point	Control ($N = 31$), mean (SD)	Nostalgia ($N = 36$), mean (SD)
Companionship (1 = *none*, 4 = *high*)	The narrator expresses appreciation at not being alone, in being able to share things with someone else, and in experiencing a sense of belongingness - for example, "We used to go over to X to see Y's parents. His father and mother ... so we were able to take the children quite easily to play on the beach and we enjoyed that very much ... the old aunt lived in the same house so they used to come out onto the beach with us in the afternoon sitting there ... and watch the children playing. Yes, that was a happy time" (89-year-old woman with vascular dementia, allocated to the nostalgia condition).	2.26 (0.89)	3.19 (0.92)
Connectedness to others (1 = *none*, to 5 = *very/extremely*)	The experience of feeling close and connected to others, and as involving feeling loved, cared for, and valued for example, "We liked the school and the pupils and the teachers. Some teachers have been lifelong friends and altogether it was one of the great experiences of our lives .. and we'd also met, amazingly, an ex-school mate of mine .. and he had his wife with him and another young couple and the three of us, the six of us in the same corner of Z .. so we kept meeting up" (81-year-old man with vascular dementia, allocated to nostalgia condition).	1.94 (1.12)	3.72 (1.19)
Relationship closeness (1 = *none*, to 5 = *very/extremely*)	A strong, deep, or intimate relationship or friendship - for example, "When my father gave me away he was equally excited because he got on with my husband very well and my mother was a bit sad in some ways cause she felt I was moving away, but that didn't happen, one was able to see her a lot. Going to the church and all our friends and family around us. I remember all that" (78-year-old woman with Alzheimer's disease, allocated to the nostalgia condition)	2.16 (1.00)	3.81 (1.22)

Narratives exemplifying the existential property of nostalgia.

(Continued)

Table 1. Continued

Domain (rating scale)	Definition and example from narrative rated at the highest point	Control (N = 31), mean (SD)	Nostalgia (N = 36), mean (SD)
Meaning in life (1 = *none*, to 5 = *very/extremely*)	A way of making sense of life or giving purpose to life - for example, *"That is the one thing that keeps me going is her [his wife]. Beyond that I couldn't do, and I wouldn't know what to do next"* (81-year-old man with Alzheimer's disease, allocated to the nostalgic condition).	1.61 (1.02)	2.75 (1.48)

Table 2. LIWC Categories Relating to Social Processes and Affect for Control and Nostalgia Conditions.

	Example of words in category	Control, mean (*SD*)	Nostalgia, mean (*SD*)
Social processes			
Social processes	Talking, sharing, giving	8.27 (4.42)	11.99 (4.24)
Family	Mother, daughter, uncle	0.52 (0.87)	1.89 (1.52)
Friends	Buddy, neighbor, pal	0.05 (0.16)	0.44 (0.58)
Male-related	Boy, his, he	0.26 (0.55)	1.94 (2.41)
Female-related	Girl, her, she	1.10 (1.91)	1.59 (1.80)
Affect			
Positive affect	Love, nice, sweet	2.91 (2.04)	3.57 (1.74)
Negative affect	Worried, hate, cry	0.54 (0.84)	0.49 (0.57)

Bonferroni correction (i.e.,,dividing the significance level of .05 by the number of comparisons) to account for multiple comparisons.

Results

Descriptive Data

We provide demographic data in Table 3. All participants identified themselves as White British, except for one participant in the nostalgia condition, who identified themselves as Chinese, and a participant in the control condition, who identified themselves as a member of another, white, community. There was no difference between participants in the nostalgia versus control condition on age, anxiety, depression, cognitive functioning, or diagnosis. However, the distribution of participants in the two conditions was uneven in terms of gender: there were more women (22) than men (14) in the nostalgia condition, and more men (20) than women (11) in the control condition, $\chi^2(1) = 4.38$, $p = 0.036$, $\Psi = 0.26$. Also, nostalgic narratives ($M = 213.78$, $SD = 130.26$) contained more words than control narratives ($M = 137.77$, $SD = 74.81$), $t(65) = 2.87$, $p = 0.006$, $d = 1.05$.

Content of Nostalgic and Control Narratives

Table 4 details the frequency with which nostalgic and control narratives referred to specific events, periods, places, and people. The table also provides examples of each category. The two conditions did not differ in the extent to which they referred to each category. However, there were two differences between nostalgic and control narratives. First, all 17 nostalgic narratives which referred to a specific event were rated as reflecting atypical events. However, the 15 control narratives that related to a specific event were more likely to reflect routine events (9) and less likely to reflect atypical events (6). Thus, nostalgic (compared to control) narratives where more likely to

Table 3. Demographic and Clinical Characteristics of Participants.

	Control (N = 31), M (SD)	Nostalgia (N = 36), M (SD)
Age	79.77 (7.14)	79.78 (9.48)
Anxiety (GAI)	0.90 (1.71)*	1.81 (3.07)**
Depression (GDS)	1.55 (1.19)*	2.52 (2.71)**
Word length	137.8 (74.8)	213.8 (130.3)
Cognitive functioning		
ACE-III	74.40 (6.01)*	74.62 (7.04)**
CDRS-1 (mild dementia)	5	6
CDRS-2 (moderate dementia)	6	9
Gender		
Women	11	22
Men	20	14
Living circumstances		
Alone	5	11
With partner	25	23
With family	0	2
Residential care	1	0
Diagnosis		
Alzheimer's disease (DAT)	21	19
Vascular dementia (VaD)	4	8
Mixed DAT/VaD	6	8
Lewy Body dementia	0	1

Note. *n = 20, **n = 21. ACE-III = Addenbrooke's Cognitive Evaluation; CDR = Clinical Dementia Rating Scale; DAT = Dementia Alzheimer's Type; Type; GAI = Geriatric Anxiety Inventory; GDS = Geriatric Depression Scale; VaD = Vascular Dementia.

describe atypical (relative to routine) events, $\chi^2(1) = 14.19$, $p < .001$, $\Psi = 0.67$. Secondly, coders rated all 17 nostalgic narratives that related to a specific event as including an emotional component (e.g., graduation, death of a parent). In contrast, only one of the 15 control narratives that related to a specific event was rated as including an emotional component, with the remaining 14 being rated as emotionally neutral. Thus, nostalgic (compared to control) narratives were more likely to describe emotional (relative to neutral) events, $\chi^2(1) = 28.21$, $p < .001$, $\Psi = 0.94$.

Properties of Nostalgia

Self–oriented Property

In relevant analyses (all involving manual coding), we adopted a Bonferroni-adjusted significance level of $p = .017$. Nostalgic narratives contained more expressions of high self-esteem ($t[65] = 3.07$, $p = .003$, $d = 0.7$) and self-continuity ($t[65] = 4.67$, $p < 0.001$,

Table 4. Objects of Memories - Coding Categories, Frequency of Narratives Coded Into Categories, and Category Examples.

Category	Ordinary memories (N = 31)	Nostalgic memories (N = 36)	Example
1. Specific event	15	17	The year was December 1999 and it was at my daughter's wedding. It took place at a chapel in western X, it was a very happy time (75-year-old man with a mixed dementia allocated to the nostalgia condition).
2. Period in life	7	12	I was interested, having the opportunity of joining the army. I wanted to join the army and ... after I made the six months, they were transferring people to other areas ... and I liked the idea of going to Singapore, I found that work very interesting (89-year-old man with vascular dementia allocated to the nostalgia condition).
3. Place	8	3	So we used to go to a beach in Cornwall, and we always had a fantastic time there, we had a lot of freedom …. and one particular year when we were there it was my Dad's birthday, so they hired this huge house (56 year old man with Alzheimer's disease, allocated to the nostalgia condition).
4. Person	1	4	This is when my father was quite a young curate in a country parish which was really quite an idyllic place to be and he was very busy because he had three parishes, so he didn't have a lot of time to spare ... but he always used to have a kind of game in the evening when he and I would play ball (87-year-old woman with Alzheimer's disease, allocated to the nostalgia condition).

d = 1.15) than control narratives. However, nostalgic narratives did not contain more expressions of optimism than control narratives (*t*[65] =1.72, *p* = .091, *d* = 0.43).

Social Property

We assessed the social property of nostalgia in terms of social processes (derived from LIWC word-text analysis) and social dimensions (derived from manual coding). In regard to the four LIWCsub-categories of social processes, we used a Bonferroni-adjusted significance level of *p* = .0125. For the three social dimensions, we used a Bonferroni-adjusted significance level of *p* = .017.

Social Processes

Nostalgic narratives featured a higher proportion of social processes words than control narratives (*t*[65] =3.50, *p* = .001, *d* = 0.86). Separate tests for each of the LIWC social processes subcategories revealed that nostalgic (compared to control) narratives contained a greater proportion of words relating to family (*t*[65] =4.40, *p* < .001, *d* = 1.11) and friends (*t*[65] =3.56, *p* = .001, *d* = 0.92). Nostalgic narratives also contained more male-related words than did control narratives (*t*[65] =3.79, *p* < .001, *d* = 0.96). However, nostalgic and control narratives did not differ significantly on female-related words (*t*[65] =1.09, *p* = .281, *d* = 0.26).

Social Dimensions

Nostalgic (compared to control) narratives contained higher levels of companionship (*t*[65] =4.21, *p* < .001, *d* = 1.03), connectedness (*t*[65] =6.30, *p* < .001, *d* = 1.54), and close relationships (*t*[65] =5.98, *p* < .001, *d* = 1.47).

Existential Property

Nostalgic narratives contained more references to meaning in life than control narratives (*t*[62] =3.70, *p* < .001, *d* = 0.90).

Positive affect and Negative Affect

Using the PANAS-derived ratings, we carried out a 2 (affect: positive, negative) × 2 (condition: nostalgia, control) mixed Analysis of Variance (ANOVA), treating affect as a within-subjects variable. The interaction was significant, $F(1, 65)$ =13.86, *p* < .001, η^2 = 0.18. Nostalgic narratives (*M* = 15.03, *SD* = 4.95) were characterized by more positive affect than control narratives (*M* = 10.48, *SD* = 3.66), *t*(65) = 4.31, *p* < .001, *d* = 1.06. However, nostalgic (*M* = 8.00, *SD* = 2.06) and control (*M* = 7.45, *SD* = 0.96) narratives did not differ significantly on negative affect, *t*(65) = 1.43, *p* = .16, *d* = 0.34.

We proceeded to test for differences on the LIWC-derived positive and negative affect scores. Again, we carried out a 2 (affect: positive, negative) × 2 (condition: nostalgia, control) mixed ANOVA, treating affect as a within-subjects variable. There was a strong main effect of affect, with both types of narrative expressing significantly higher levels of positive (*M* = 3.27, *SD* = 1.90) than negative (*M* = 0.51, *SD* = 0.70)

affect, $F(1, 65) = 108.27$, $p < .001$, $\eta^2 = 0.63$. However, the interaction between emotion and condition was not significant, $F(1, 65) = 1.85$, $p = .179$, $\eta^2 = 0.03$.

Gender Differences

The higher number of women in the nostalgia compared to the control condition raises the possibility that the condition effect was confounded with gender. To control for this, we conducted a series of 2 (condition: nostalgia, control) × 2 (gender: male, female) ANOVAs on all dependent variables, using the same adjusted levels of significance reported above. These analyses did not reveal any significant gender main effects or Condition × Gender interactions. Importantly, all previously significant effects of condition (nostalgia vs. control) remained significant when we included gender in the model.

Discussion

Summary of Findings

We explored the nature of nostalgic narratives in people with dementia and examined whether these narratives' key features resemble those seen in studies with healthy older adults. We established that both nostalgic and control narratives pertained to specific events, although nostalgic ones were longer, more likely to have a strong affective element, and more often referred to a typical than to routine experiences. In terms of the self-oriented property, nostalgic narratives contained more expressions of self-esteem and self-continuity, but not more expressions of optimism, than control narratives. In terms of the social property, nostalgic narratives featured a higher proportion of social processes words, especially words referring to family and to friends. Further, nostalgic narratives contained more references to companionship, connectedness, and close relationships. In terms of the existentialproperty, nostalgic narratives entailed more references to meaning in life.

Finally, results revealed higher levels of PANAS-derived positive, but not negative, affect in nostalgic than control narratives. However, there were no differences between conditions on the LIWC-derived affect measures. Importantly, these two ways in which we analyzed the affectivecontent of the narratives (i.e., PANAS and LIWC) tap into slightly different aspects. LIWC is a word-level text analysis programme that classifies and counts words into specific categories but does not take the meaning or context of the entire narrative into account, as it codes each word independently of all the others. By contrast, the PANAS scores were based on content analysis, where coders made global ratings of the content and meaning of the narratives while accounting for context and linguistic devices, such as humor and colloquial language (Wildschut et al., 2018). As such the results are not necessarily contradictory; rather, they point towards nostalgia increasing positive affect when measured as a gestalt (PANAS) as opposed to within specific words (LIWC).

Nostalgic and Ordinary Memories

Results indicated that the content of nostalgic autobiographical memories of people living with dementia differ from the content of their ordinary memories. Specifically, nostalgic (vs. ordinary) narratives are more self-oriented, social, and meaningful.

The findings pertaining to the self-oriented property of nostalgia are consistent with those of healthy adults (Brown & Humphreys, 2002; Milligan, 2003; Wildschut et al., 2006). Although autobiographical memories degrade in factual reliability among persons living with dementia, these memories may continue to facilitate self-functioning (El Haj, Antoine, Nandrino, et al., 2015; Morris & Mograbi, 2013). As mentioned above, nostalgic (compared to ordinary) memories were more likely to reflect events associated with higher self-esteem and self-continuity. Older adults, both with and without dementia, show a peak in the recollection of events from middle childhood, adolescence, and early adulthood (Kirk & Berntsen, 2018), a phenomenon that has been labelled the reminiscence bump. Although we did not examine the time period during which narratives were formed, many of the nostalgic events pertained to wedding days, family holidays, or graduations, and so they likely occurred within the time frame of the reminiscence bump. Such events, which tend to signify core characteristics of identity (Buchanan & Middleton, 1995), help to sustain the integrity of the self.

The findings pertaining to the social property of nostalgia are consistent with those of Wildschut et al. (2018), who, in a sample of healthy older adults, showed that nostalgic narratives contained a higher proportion of words relating to social processes and family. The social property of nostalgia may be especially important. Given that the lives of people living with dementia are framed within the context of a limited future time perspective, they may increasingly value positive social relationships (Carstensen et al., 1999). Under these circumstances, nostalgia may play a key role in establishing at least a symbolic connection with significant others across the lifespan (Mills & Coleman, 1994; Sedikides et al., 2004).

Lastly, the findings pertaining to the existential property of nostalgia are also consistent with those of healthy adults (Davis, 1979; Wilson, 2005). Meaning in life may be a subjective sense derived from the self-oriented property of nostalgia, as both self-esteem (Schlegel et al., 2009) and self-continuity (Van Tilburg et al., 2019) are positively related to meaning. Alternatively, meaning in life may be based on the social property of nostalgia, as sociality is positivity related to meaning (Routledge et al., 2011).

Potential Differences Between Nostalgic Memories of People Living with Dementia and Healthy Adults

Our findings are largely consistent with those produced by studies into the role of nostalgia in healthy adults. Yet, there are some inconsistencies. For example, nostalgic narratives contained more expressions of self-esteem and self-continuity than control narratives, but, unlike relevant findings among healthy adults (Cheung et al., 2013),

they did not contain significantly more expressions of optimism (although there was a trend in that direction). Optimism concerns a projection of the self into the future. Although some people living with dementia report being optimistic and hopeful (Wolverson Radbourne et al., 2010), people living with dementia are generally less oriented to the future and more oriented to the present than cognitively healthy older adults (El Haj et al., 2020). Our findings align with this pattern.

Nostalgic (vs. ordinary) memories of people living with dementia were social: they featured a higher proportion of social processes words (especially ones describing family and friends), and contained higher levels of companionship, connectedness, and close relationships. These patterns concur with those from healthy adults (Sedikides & Wildschut, 2019; Wildschut et al., 2006) and specifically from older healthy adults (Wildschut et al., 2018). Additionally, nostalgic narratives were more likely to include affective elements, especially more positive emotions, but, broadly consistent with research with healthy adults (Leunissen et al., 2021), there was no difference between nostalgic and ordinary memories on negative affect.

Limitations

Although the key features of nostalgia narratives of people living with dementia are similar to those documented in studies with cognitively healthy older adults, we did not directly compare the memories of the two populations. Thus, it is possible that people living with dementia find it more difficult to recall nostalgic memories, and that these memories are less detailed or differ in other respects from those of their cognitively healthy peers. Subsequent research should, therefore, seek to map these contrasts directly.

The nostalgia condition included a higher number of women, and the control condition a higher number of men, creating a potential confound between condition and gender. However, when we repeated the analyses using gender as a between-subjects' variable, the significant differences between nostalgic and control narratives remained intact. Furthermore, the relevant literature on healthy adults rarely finds differences in the nostalgic experiences of women and men (Sedikides et al., 2015). We therefore consider it unlikely that the between-conditions gender imbalance impacted substantially on the results. Nevertheless, our results need to be replicated with larger samples from different sites to determine the extent and relevance of gender differences.

Given that we focused on the content of nostalgic narratives, a question arises as to whether this content is linked to nostalgia's functions. We derived the narratives from work by Ismail et al. (2018). In one experiment, people living with dementia who recalled a nostalgic (relative to an ordinary) event subsequently rated themselves higher on self-esteem, self-continuity, optimism, social connectedness/sense of belonging, meaning in life, and positive affect. These findings were then replicated in a follow-up experiment, in which nostalgia was induced with music. It seems, then, that the distinctive content of nostalgic narratives conduces to specific and distinctive psychological functions as well.

Implications and Conclusion

The three properties of nostalgia echo important themes within the dementia care literature: self-functioning (El Haj et al., 2019; Sabat, 2018), social relationships (Kitwood & Brooker, 2019), and meaning in life (Cheston et al., 2015; Mackinlay & Trevitt, 2010). Our findings indicate that nostalgia has a key role to play among persons living with dementia. We further note that nostalgia acts as a buffer against distress arising from threats to the self. Put otherwise, nostalgia provides a form of self-protection against events or circumstances that undermine a person's core beliefs about who they are (Sedikides et al., 2015; Wildschut & Sedikides, 2020). This is relevant to dementia care, given the existential threat that dementia poses (Cheston & Christopher, 2019). Understanding the differences between nostalgic and ordinary autobiographical memories may, therefore, hold promise for interventions that not only enhance personhood, but also facilitate adjustment to the illness.

The distinction between nostalgic and ordinary autobiographical memories has implications for the design of interventions for people living with dementia and their families, such as reminiscence therapy (Woods et al., 2016). Given the substantive benefits that accrue from nostalgic reflection, reminiscence without nostalgia is likely to be relatively ineffective (Charlesworth & Wenborn, 2017). However, reminiscence therapy typically pays little, if any, attention to either the quality or the form of memories that are brought to mind. Instead, it is the act of recollection that is thought to be important. This act of remembering often occurs within a group context, in which the memories of one participant stimulate and trigger others in the group to reminisce themselves (Schweitzer & Bruce, 2008). Nostalgia by contrast, refers to the evocation of personally-relevant and emotionally poignant memories in which the self plays a prominent role within a social context. Consequently, the most effective method to evoke nostalgia is likely to be within small conversational pairs, such as couples or families who are able to draw on a repository of collective, shared memories (Dodd et al., in press). Although a person can reminisce without being nostalgic, they cannot be nostalgic without remembering (Batcho, 2007).

Not all autobiographical memories are equal. Compared to ordinary narratives, nostalgic ones are characterized by self-oriented, social, and existential properties. Capitalizing on these properties, recent studies have begun to explore nostalgia's beneficial effects for well-being among students (Layous et al., in press) and older people (Bong et al., 2020). Despite often severe cognitive impairment, people who live with dementia engage in nostalgic reverie in similar ways to the wider population, and so are also likely to be receptive to the psychological benefits that nostalgia confers. It is vital, then, that dementia clinicians and researchers rise to the challenge of harnessing the potential of nostalgia.

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Note

1. The data originated in two studies reported in Ismail *et al.* (2018b), both of which received appropriate ethical and site permissions. Study 1 received approval on the 25th January 2015 (REC reference 14/EE/1135) with minor amendments approved on the 11th May 2015 and the 19th August 2015. Study 3 received ethical approval on the 30th August 2016 (REC ref: 16/ES/0097), with UWE Bristol ethics approval received on 9th September 2016 (ref: HAS.16.07.181). Trial protocols for both studies were registered (ISRCTN54996662 and ISRCTN78958013).

References

Abeyta, A. A., Routledge, C., Roylance, C., Wildschut, T., & Sedikides, C. (2015). Attachment-related avoidance and the social and agentic content of nostalgic memories. *Journal of Social and Personal Relationships*, *32*(3), 406–413. https://doi.org/10.1177/0265407514533770

Addis, D. R., & Tippett, L. J. (2004). Memory of myself: Autobiographical memory and identity in Alzheimer's disease. *Memory*, *12*(1), 56–74. https://doi.org/10.1080/09658210244000423

Batcho, K. I. (2007). Nostalgia and the emotional tone and content of song lyrics. *The American Journal of Psychology*, *120*(3), 361–381. https://doi.org/10.2307/20445410

Ben Malek, H., Philippi, N., Botzung, A., Cretin, B., Berna, F., Manning, L., & Blanc, F. (2019). Memories defining the self in Alzheimer's disease. *Memory*, *27*(5), 698–704. https://doi.org/10.1080/09658211.2018.1554080

Bong, W. K., Maußer, F., van Eck, M., De Araujo, D., Tibosch, J., Glaum, T., & Chen, W. (2020). *Designing nostalgic tangible user interface application for elderly people* [Conference session]. International Conference on Computers Helping People with Special Needs, Springer, Cham, (pp. 471-479).

British Psychological Society. (2016). *Psychological dimensions of dementia: Putting the person at the centre of care*. British Psychological Society.

Brown, A. D., & Humphreys, M. (2002). Nostalgia and the narrativization of identity: A Turkish case study. *British Journal of Management*, *13*(2), 141–159. https://doi.org/10.1111/1467-8551.00228

Buchanan, K., & Middleton, D. (1995). Voices of experience: Talk, identity and membership in reminiscence groups. *Ageing and Society*, *15*(4), 457–491. https://doi.org/10.1017/S0144686X00002865

Carstensen, L. L., Isaacowitz, D. M., & Charles, S. T. (1999). Taking time seriously. A theory of socioemotional selectivity. *American Psychologist*, *54*(3), 165–181. https://doi.org/10.1037/0003-066X.54.3.165

Charlesworth, G., Wenborn, J., Stickley, T., & Clift, S. (2017). *Group reminiscence for people with dementia and their family carers: The art of scientific evaluation*. Cambridge Scholars Publishing.

Cheston, R., & Christopher, G. (2019). *Confronting the existential threat of dementia: An exploration into emotion regulation*. Palgrave-MacMillan.

Cheston, R., Christopher, G., & Ismail, S. (2015). Dementia as an existential threat: The importance of self-esteem, social connectedness and meaning in life. *Science Progress*, *98*(Pt 4), 416–419. https://doi.org/10.3184/003685015X14467423210693

Cheung, W.-Y., Wildschut, T., Sedikides, C., Hepper, E. G., Arndt, J., & Vingerhoets, A. J. J. M. (2013). Back to the future: Nostalgia increases optimism. *Personality & Social Psychology Bulletin*, *39*(11), 1484–1496. https://doi.org/10.1177/0146167213499187

Conway, M. A., Singer, J. A., & Tagini, A. (2004). The self and autobiographical memory: Correspondence and coherence. *Social Cognition*, *22*(5), 491–529. https://doi.org/10.1521/soco.22.5.491.50768

Davis, F. (1979). *Yearning for yesterday: A sociology of nostalgia*. Free Press.

Dodd, E., Ismail, S., Christopher, G., Wildschut, R. T., Sedikides, C., & Cheston, R. (in press). Nostalgic conversations: The co-production of an intervention package for people living with dementia and their spouse. *Dementia: The International Journal of Social Research and Policy*.

El Haj, M., & Antoine, P. (2017). Discrepancy between subjective autobiographical reliving and objective recall: The past as seen by Alzheimer's disease patients. *Consciousness and Cognition*, *49*, 110–116. https://doi.org/10.1016/j.concog.2017.01.009

El Haj, M., Antoine, P., Nandrino, J. L., Gély-Nargeot, M.-C., & Raffard, S. (2015). Self-defining memories during exposure to music in Alzheimer's disease. *International Psychogeriatrics*, *27*(10), 1719–1730. https://doi.org/10.1017/S1041610215000812

El Haj, M., Antoine, P., Nandrino, J. L., & Kapogiannis, D. (2015). Autobiographical memory decline in Alzheimer's disease, a theoretical and clinical overview. *Ageing Research Reviews*, *23*(Pt B), 183–192. https://doi.org/10.1016/j.arr.2015.07.001

El Haj, M., Boudoukha, A., Antoine, P., Moustafa, A. A., Gallouj, K., & Allain, P. (2019). Memories supporting myself: Autobiographical memory supports self-continuity in Alzheimer's Disease. *Journal of Alzheimer's Disease*, *70*(4), 1217–1224. https://doi.org/10.3233/JAD-190440

El Haj, M., Kapogiannis, D., & Antoine, P. (2016). Phenomenological reliving and visual imagery during autobiographical recall in Alzheimer's disease. *Journal of Alzheimer's Disease*, *52*(2), 421–431. https://doi.org/10.3233/JAD-151122

El Haj, M., Kapogiannis, D., & Antoine, P. (2020). The (fatalistic) present as experienced by individuals with Alzheimer's disease: A preliminary study. *Neurological Sciences*, *41*(2), 427–433. https://doi.org/10.1007/s10072-019-04121-w

Hepper, E. G., Wildschut, T., Sedikides, C., Ritchie, T. D., Yung, Y.-F., Hansen, N., Abakoumkin, G., Arikan, G., Cisek, S. Z., Demassosso, D. B., Gebauer, J. E., Gerber, J. P., González, R., Kusumi, T., Misra, G., Rusu, M., Ryan, O., Stephan, E., Vingerhoets, A. J. J., & Zhou, X. (2014). Pancultural nostalgia: Prototypical conceptions across cultures. *Emotion*, *14*(4), 733–747. https://doi.org/10.1037/a0036790

Hepper, E. G., Wildschut, T., Sedikides, C., Robertson, S., & Routledge, C. D. (2021). Time capsule: Nostalgia shields psychological wellbeing from limited time horizons. *Emotion*, *21*(3), 644–664. https://doi.org/10.1037/emo0000728

Hughes, C. P., Berg, L., Danziger, W., Coben, L. A., & Martin, R. L. (1982). A new clinical scale for the staging of dementia. *British Journal of Psychiatry*, *140*(6), 566–572. https://doi.org/10.1192/bjp.140.6.566

Ismail, S., Christopher, G., Dodd, E., Wildschut, T., Sedikides, C., Ingram, T. A., Jones, R. W., Noonan, K. A., Tingley, D., & Cheston, R. (2018). Psychological and mnemonic benefits of Nostalgia for people with dementia. *Journal of Alzheimer's Disease*, *65*(4), 1327–1344. https://doi.org/10.3233/JAD-180075

Juhl, J., Wildschut, T., Sedikides, C., Diebel, T., Cheung, W.-Y., & Vingerhoets, A. J. J. M. (2020). Nostalgia proneness and empathy: Generality, underlying mechanism, and implications for prosocial behavior. *Journal of Personality*, *88*(3), 485–500. https://doi.org/10.1111/jopy.12505

Kirk, M., & Berntsen, D. (2018). The life span distribution of autobiographical memory in Alzheimer's disease. *Neuropsychology*, *32*(8), 906–919. https://doi.org/10.1037/neu0000486

Kitwood, T., & Brooker, D. (Eds.). (2019). *Dementia reconsidered, revisited: The person still comes first*. Open University Press.

Klein, S. B., Cosmides, L., & Costabile, K. A. (2003). Preserved knowledge of self in a case of Alzheimer's dementia. *Social Cognition*, *21*(2), 157–165. https://doi.org/10.1521/soco.21.2.157.21317

Layous, K., Kurtz, J. L., Wildschut, T., & Sedikides, C. (in press). The effect of a multi-week nostalgia intervention on well-being: Mechanisms and moderation. *Emotion*.

Leunissen, J., Wildschut, T., Sedikides, C., & Routledge, C. (2021). The hedonic character of Nostalgia: An integrative data analysis. *Emotion Review*, *13*(2), 139–156. https://doi.org/10.1177/1754073920950455

Livingston, G., Johnston, K., Katona, C., Paton, J., Lyketsos, C. G., & Old Age Task Force of the World Federation of Biological Psychiatry. (2005). Systematic review of psychological approaches to the management of neuropsychiatric symptoms of dementia. *American Journal of Psychiatry*, *162*(11), 1996–2021. https://doi.org/10.1176/appi.ajp.162.11.1996

Mackinlay, E., & Trevitt, C. (2010). Living in aged care: Using spiritual reminiscence to enhance meaning in life for those with dementia. *International Journal of Mental Health Nursing*, *19*(6), 394–401. https://doi.org/10.1111/j.1447-0349.2010.00684.x

Madoglou, A., Gkinopoulos, T., Xanthopoulos, P., & Kalamaras, D. (2017). Representations of autobiographical nostalgic memories: Generational effect, gender, nostalgia proneness and communication of nostalgic experiences. *Journal of Integrated Social Sciences*, *7*, 60–88.

McKeith, I. G. (2002). Dementia with Lewy bodies. *British Journal of Psychiatry*, *180*(2), 144–147. https://doi.org/10.1192/bjp.180.2.144

McKhann, G., Drachman, D., Folstein, M., Katzman, R., Price, D., & Stadlan, E. M. (1984). Clinical diagnosis of Alzheimer's disease: Report of the NINCDS-ADRDA work group under the auspices of Department of Health and Human Services Task Force on Alzheimer's Disease. *Neurology*, *34*(7), 939–944. https://doi.org/10.1212/wnl.34.7.939

Milligan, M. J. (2003). Displacement and identity discontinuity: The role of nostalgia in establishing new identity categories. *Symbolic Interaction*, *26*(3), 381–403. https://doi.org/10.1525/si.2003.26.3.381

Mills, M. A., & Coleman, P. G. (1994). Nostalgic memories in dementia-a case study. *The International Journal of Aging and Human Development*, *38*(3), 203–219. https://doi.org/10.2190/NCAJ-0G0L-VTQ4-V1L8

Morris, R. G., & Mograbi, D. C. (2013). Anosognosia, autobiographical memory and self knowledge in Alzheimer's disease. *Cortex*, *49*(6), 1553–1565. https://doi.org/10.1016/j.cortex.2012.09.006

Nasreddine, Z., Phillips, N., Bédirian, V., Charbonneau, S., Whitehead, V., Collin, I., Cummings, J., & Chertkow, H. (2005). The montreal cognitive assessment, MoCA: A brief screening tool for mild cognitive impairment. *Journal of the American Geriatric Society*, *53*(4), 695–699.

Noone, P. (2015). Addenbrooke's cognitive examination-III. *Occupational Medicine*, *65*(5), 418–420. https://doi.org/10.1093/occmed/kqv041

Pachana, N. A., Byrne, G. J., Siddle, H., Koloski, N., Harley, E., & Arnold, E. (2007). Development and validation of the geriatric anxiety inventory. *International Psychogeriatrics*, *19*(1), 103–114. https://doi.org/10.1017/S1041610206003504

Pennebaker, J. W., Boyd, R. L., Jordan, K., & Blackburn, K. (2015). *The development and psychometric properties of LIWC 2015*. University of Texas at Austin.

Román, G. C., Tatemichi, T. K., Erkinjuntti, T., Cummings, J. L., Masdeu, J. C., Garcia, J. H., Amaducci, L., Orgogozo, J. M., Brun, A., & Hofman, A., & Moody, D. M. (1993). Vascular dementia: Diagnostic criteria for research studies. Report of the NINDS-AIREN international workshop. *Neurology*, *43*(2), 250–260. https://doi.org/10.1212/WNL.43.2.250

Routledge, C., Arndt, J., Wildschut, T., Sedikides, C., Hart, C. M., Juhl, J., Vingerhoets, A. J. J. M., & Schlotz, W. (2011). The past makes the present meaningful: Nostalgia as an existential resource. *Journal of Personality and Social Psychology*, *101*(3), 638–652. https://doi.org/10.1037/a0024292

Sabat, S. (2018). *Alzheimer's disease and dementia: What everyone needs to know*. Oxford University Press.

Schlegel, R. J., Hicks, J. A., Arndt, J., & King, L. A. (2009). Thine own self: True self-concept accessibility and meaning in life. *Journal of Personality and Social Psychology*, *96*(2), 473–490. https://doi.org/10.1037/a0014060

Schweitzer, P., & Bruce, E. (2008). *Remembering yesterday, caring today: Reminiscence in dementia care: A guide to good practice*. Jessica Kingsley Publishers.

Sedikides, C., & Wildschut, T. (2016). Nostalgia: A bittersweet emotion that confers psychological health benefits. In A. M. Wood & J. Johnson (Eds.), *Wiley handbook of positive clinical psychology* (pp. 25–36). Wiley.

Sedikides, C., & Wildschut, T. (2018). Finding meaning in Nostalgia. *Review of General Psychology*, *22*(1), 48–61. https://doi.org/10.1037/gpr0000109

Sedikides, C., & Wildschut, T. (2019). The sociality of personal and collective nostalgia. *European Review of Social Psychology*, *30*(1), 123–173. https://doi.org/10.1080/10463283.2019.1630098

Sedikides, C., Wildschut, T., & Baden, D. (2004). Nostalgia: Conceptual issues and existential functions. In J. Greenberg, S. Koole, & T. Pyszczynski (Eds.), *Handbook of experimental existential psychology* (pp. 200–214). Guilford Press.

Sedikides, C., Wildschut, T., Cheung, W.-Y., Routledge, C., Hepper, E. G., Arndt, J., Vail, K., Zhou, X., Brackstone, K., & Vingerhoets, A. J. J. M. (2016). Nostalgia fosters self-continuity: Uncovering the mechanism (social connectedness) and consequence (eudaimonic well-being). *Emotion*, *16*(4), 524–539. https://doi.org/10.1037/emo0000136

Sedikides, C., Wildschut, T., Routledge, C., Arndt, J., Hepper, E., & Zhou, X. (2015). To nostalgize: Mixing memory with affect and desire. *Advances in Experimental Social Psychology*, *51*(1), 189–273. https://doi.org/10.1016/bs.aesp.2014.10.001

Singer, J. A., Blagov, P., Berry, M., & Oost, K. M. (2013). Self-defining memories, scripts, and the life story: Narrative identity in personality and psychotherapy. *Journal of personality*, *81*(6), 569–582. https://doi.org/10.1111/jopy.12005

Snowden, J. S., Neary, D., & Mann, D. M. A. (2002). Frontotemporal dementia. *British Journal of Psychiatry*, *180*(2), 140–143. https://doi.org/10.1192/bjp.180.2.140

Stephan, E., Sedikides, C., & Wildschut, T. (2012). Mental travel into the past: Differentiating recollections of nostalgic, ordinary, and positive events. *European Journal of Social Psychology*, *42*(3), 290–298. https://doi.org/10.1002/ejsp.1865

The New Oxford Dictionary of English. (1998). (J. Pearsall, Ed.). Oxford University Press.

van Marwijk, H. W., Wallace, P., de Bock, G. H., Hermans, J., Kaptein, A. A., & Mulder, J. D. (1995). Evaluation of the feasibility, reliability and diagnostic value of shortened versions of the geriatric depression scale. *The British Journal of General Practice: The Journal of the Royal College of General Practitioners*, *45*(393), 195–199.

Van Tilburg, W. A. P., Sedikides, C., Wildschut, T., & Vingerhoets, A. J. J. M. (2019). How nostalgia infuses life with meaning: From social connectedness to self-continuity. *European Journal of Social Psychology*, *49*(3), 521–532. https://doi.org/10.1002/ejsp.2519

Watson, D., Clark, L. A., & Tellegen, A. (1988). Development and validation of brief measures of positive and negative affect: The PANAS scales. *Journal of Personality and Social Psychology*, *54*(6), 1063–1070. https://doi.org/10.1037/0022-3514.54.6.1063

Wildschut, T., & Sedikides, C. (2020). The psychology of nostalgia: Delineating the emotion's nature and functions. In M. H. Jacobson (Ed.), *Nostalgia now: Cross-disciplinary perspectives on the past in the present*. Routledge Press.

Wildschut, T., Sedikides, C., Arndt, J., & Routledge, C. (2006). Nostalgia: Content, triggers, functions. *Journal of Personality and Social Psychology*, *91*(5), 975–993. https://doi.org/10.1037/0022-3514.91.5.975

Wildschut, T., Sedikides, C., & Robertson, S. (2018). Sociality and intergenerational transfer of older adults' nostalgia. *Memory*, *26*(8), 1030–1041. https://doi.org/10.1080/09658211.2018.1470645

Wilson, J. L. (2005). *Nostalgia: Sanctuary of meaning*. Associated University Press.

Wolverson Radbourne, E. L., Clarke, C., & Moniz-Cook, E. (2010). Remaining hopeful in early-stage dementia: A qualitative study. *Aging & Mental Health*, *14*(4), 450–460. https://doi.org/10.1080/13607860903483110

Woods, R. T., Orrell, M., Bruce, E., Edwards, R. T., Hoare, Z., Hounsome, B., Keady, J., Moniz-Cook, E., Orgeta, V., Rees, J., & Russell, I. (2016). REMCARE: Pragmatic multi-centre randomised trial of reminiscence groups for people with dementia and their family carers: Effectiveness and economic analysis. *Plos One*, *11*(4), e0152843. https://doi.org/10.1371/journal.pone.0152843

World Health Organization. (1992). *The ICD-10 classification of mental and behavioural disorders: Diagnostic criteria for research* (Vol. 2). World Health Organization.

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