

The psychological benefits of music-evoked nostalgia

Constantine Sedikides¹ , Joost Leunissen²
and Tim Wildschut¹

Psychology of Music

2022, Vol. 50(6) 2044–2062

© The Author(s) 2021



Article reuse guidelines:

sagepub.com/journals-permissions

DOI: 10.1177/03057356211064641

journals.sagepub.com/home/pom

Abstract

We provide a narrative review of the nascent literature on the psychological benefits of music-evoked nostalgia. Music is a prevalent and influential source of nostalgia. Music-evoked nostalgia confers approach-oriented psychological benefits in the social domain (by fostering social connectedness), self-oriented domain (by raising self-esteem, instilling a sense of youthfulness, elevating optimism, and enhancing inspiration), and existential domain (by strengthening meaning in life and augmenting self-continuity). Music-evoked nostalgia also confers psychological benefits indirectly. For example, it elevates optimism by fostering sequentially social connectedness and self-esteem. Also, by fostering social connectedness, it enhances inspiration, strengthens meaning in life, and augments self-continuity. Furthermore, music-evoked nostalgia serves to buffer individuals against discomforting states, such as sadness. We conclude by discussing music-evoked nostalgia in people with dementia, contemplating the role of individual differences and context, considering the possibility that music-evoked nostalgia serves physiological functions, and asking whether familiarity with the music is necessary for the evocation of nostalgia and its ensuing benefits.

Keywords

nostalgia, music, music-evoked nostalgia, emotions, dementia

Fresh snow lay on the ground as Union army soldier S. Millet Thompson recorded in his diary the harsh conditions in the Union army camp near Fredericksburg, VA, on 30 January 1863. The army bands had received specific instructions that day from their commanders: “The bands are forbidden to play pathetic or plaintive tunes, such as Home, Sweet Home, Annie Laurie, Auld Lang Syne, etc. lest they serve to dispirit, and unnerve our suffering men” (Thompson, 1888, p. 104). Civil War songs like Home, Sweet Home, or Auld Lang Syne have distinctively nostalgic themes, which could transmit to soldiers nostalgia, a “condition” that was equated to depression

¹Center for Research on Self and Identity, School of Psychology, University of Southampton, Southampton, UK

²Department of Psychology, University of Winchester, Winchester, UK

Corresponding author:

Constantine Sedikides, Center for Research on Self and Identity, School of Psychology, University of Southampton, Southampton SO17 1BJ, UK.

Email: cs2@soton.ac.uk

and thought to be lethal (Anderson, 2010). We both agree and disagree with the decision of Thompson's commanders to forbid the army bands from playing nostalgic music. We agree that music is a powerful source of nostalgia. We disagree that nostalgia induces suffering or dispiritment. Rather, we contend that nostalgia can be a potent source of psychological well-being. What follows is a review of the psychological benefits of music-evoked nostalgia.

Researchers have noted that musical experience can influence emotions. Through music, people alter their mood states, match their current emotion, comfort themselves, relieve stress, meet psychosocial needs, validate their affiliation with a valued group, or celebrate social events or rituals (Boer et al., 2011; Brockner, 1984; Hole et al., 2015; Hunter et al., 2011; Schäfer et al., 2012, 2013; Sloboda & O'Neill, 2001). Moreover, researchers have demonstrated that music can be used to evoke emotions (Garrido et al., 2016; Juslin & Laukka, 2004; Olsen et al., 2020; Schaefer, 2017). Furthermore, the literature suggests that nostalgia occupies a prominent position among these music-induced emotions. In fact, a striking finding in the psychology of music pertains to the function of music as a reminder of valued past experiences (Barrett et al., 2010; North et al., 2004; Sloboda & O'Neill, 2001).

We engaged in a narrative review of the literature on music-evoked nostalgia. Specifically, we wondered about the psychological utility of music-evoked nostalgia.

We outline first historical and contemporary views of the construct "nostalgia." We then show that music is a prevalent and potent instigator of nostalgia. Next, we discuss at length psychological benefits of nostalgic music and nostalgia evoked via music or lyrics (i.e., music-evoked nostalgia), as documented by correlational and largely experimental findings. Most of these benefits stem from the emotion's approach-oriented property. In particular, listening to nostalgic music is positively associated with social connectedness (i.e., a sense of acceptance, social support, and belongingness; Wildschut et al., 2006), and music-evoked nostalgia (vs. control) fosters social connectedness. Also, listening to nostalgic music is positively associated with self-esteem, and music-evoked nostalgia elevates self-esteem, instills a sense of youthfulness, and augments optimism and inspiration. Furthermore, nostalgic music is positively associated with subjective perceptions of meaning in life, and music-evoked nostalgia augments meaning in life and self-continuity (i.e., a sense of temporal connection between one's past and one's present; Sedikides et al., 2015b). Last, music-evoked nostalgia has downstream implications: It increases optimism, inspiration, meaning in life, and self-continuity by fostering social connectedness. In the following part of the article, we sketch benefits that build on the emotion's buffer property, according to which music-evoked nostalgia cushions psychological discomfort. We conclude by considering emerging issues and offering future research directions.

Our review is of relevance to scholars, practitioners, and the public. Specifically, the review is relevant to researchers of music, nostalgia, and their intersection. Moreover, the review is relevant to practitioners, as the findings can be implemented in interventions to improve the daily lives of people with Alzheimer's disease and other dementias. Finally, the review is relevant to the public, as it informs optimal selection of musical excerpts to maximize well-being.

Historical and contemporary conceptions of nostalgia

Nostalgia has historically been conceptualized as a medical disease and psychiatric disorder (Batcho, 2013; Dodman, 2018; Sedikides et al., 2004). The term was coined by the Swiss physician Johannes Hofer (1688/1934), and derives from the Greek words *nostos*, meaning return to one's native land, and *algos*, meaning pain or suffering. The literal connotation of nostalgia, therefore, expresses the suffering invoked by the desire to return to one's place of origin. Hofer studied the behavioral symptoms displayed by Swiss mercenaries fighting on behalf of European

monarchs in foreign countries (e.g., France, Italy). Characteristic symptoms included obsessive thinking of home, emotional lability, anorexia, insomnia, fever, and suicidal ideation. Turning to physiological explanations for these symptoms, Hofer (1688/1934) suggested that the mercenaries suffered from nostalgia, “a cerebral disease” (p. 387), caused by “the quite continuous vibration of animal spirits through those fibers of the middle brain in which impressed traces of ideas of the Fatherland still cling” (p. 384). The conceptualization of nostalgia as a neurological disease persisted throughout the 18th and 19th centuries.

By the beginning of the 20th century, the conceptualization of nostalgia had shifted from a neurological to a psychiatric disorder (Batcho, 2013; Sedikides et al., 2004). Proponents of the psychodynamic tradition regarded nostalgia as a form of melancholia or depression, and described it as an “immigrant psychosis” (Frost, 1938, p. 801), a “mentally repressive compulsive disorder” (Fodor, 1950, p. 25), and “a regressive manifestation closely related to the issue of loss, grief, incomplete mourning, and, finally, depression” (Castelnuovo-Tedesco, 1980, p. 110). This disconsolate view equated nostalgia to homesickness, and limited the emotion to populations that are compelled to stay away from home for long periods, such as soldiers, seafarers, immigrants, and boarding or university students.

In the latter part of the 20th century, nostalgia acquired a unique conceptual status. Davis (1979) argued that, in contrast to homesickness, nostalgia refers to yearning for one’s past. He regarded nostalgia as a complex emotion, a “positively toned evocation of a lived past” (p. 18), fulfilling several psychological functions, such as establishing a sense of identity continuity over time. In addition, Davis showed that participants associate words such as *warm*, *old times*, *childhood*, and *yearning* more frequently with nostalgia than with homesickness, suggesting a conceptual distinction between the two constructs. This distinction is also reflected in *The New Oxford Dictionary of English* (Pearsall, 1988), which defines nostalgia as “a sentimental longing or wistful affection for the past, typically for a period or place with happy personal associations” (p. 1266), and homesickness as “a longing for one’s home during a period of absence from it” (p. 877). These days, the homesickness literature focuses on adjustment difficulties (e.g., separation anxiety) associated with transitions away from home (Kerns et al., 2008; Thurber & Walton, 2007), whereas the nostalgia literature focuses on the sentimental yearning for positive aspects of one’s past, a yearning that may include but is not limited to one’s home (Batcho, 1995; Sedikides et al., 2008a). Furthermore, nostalgia’s psychological profile is distinct, and far more positive, than those of rumination and counterfactual thinking (Cheung et al., 2018; Jiang et al., 2021).

Aiming for a fine-tuned, empirically derived definition of the construct, Hepper et al. (2012) investigated lay conceptions of nostalgia. People described nostalgia as involving fond and meaningful memories from their personal past (e.g., childhood, relationships) and as positive (e.g., joyous or happy) but with a sense of longing or loss. These findings were replicated across 18 cultures (Hepper et al., 2014) and confirmed with alternative methodologies (Leunissen et al., 2021; Sedikides & Wildschut, 2016). In all, nostalgia is an ambivalent, albeit mostly positive, social, and self-relevant emotion. This emotion can be triggered by internal states such as sadness (Wildschut et al., 2006), loneliness (Zhou et al., 2008), or existential threat (e.g., loss of meaning, death cognitions; Routledge et al., 2011, 2012). In addition, nostalgia can be triggered by external stimuli associated with one’s past, such as interactions with friends (Newman et al., 2020), scents (Reid et al., 2015), and, notably, music (Holak & Havlena, 1992).

Music as a source of nostalgia

In general, music is a fount of autobiographical memories (Belfi et al., 2016; Blais-Rochette & Miranda, 2016; Irish et al., 2016). Nostalgia, as we mentioned, is a self-relevant emotion,

incorporating personal, meaningful, and mostly positive autobiographical memories (Sedikides et al., 2015a; Van Tilburg et al., 2018a). Indeed, the literature indicates that music is a potent source of nostalgia. Music that was popular during an individual's youth, and thus likely nostalgic, shapes one's lifelong musical preferences (Holbrook, 1993). For example, Holbrook and Schindler (1989) asked participants, ranging in age from 16 to 86 years, to rate popular songs dating from 1932 to 1986. Participants preferred songs that were popular during their late teens rather than songs that were popular before they had reached their teens or after they had reached adulthood. Likewise, Schulkind et al. (1999) demonstrated that older adults preferred music that was popular during their youth rather than later in life. These findings illustrate an application to nostalgia of the reminiscence bump phenomenon, according to which events that took place during adolescence or early adulthood are particularly memorable or influential in later life (Rubin & Schulkind, 1997), especially when these events are autobiographical (Rathbone et al., 2008).

Music evokes emotional reactions, among which nostalgia is prevalent. For example, Janata et al. (2007) examined emotional reactions to music-evoked autobiographical memories using an inventory of 1,515 popular music excerpts, which they derived from the Billboard Top 100 Pop and R&B song lists. Participants listened to 30 excerpts selected randomly from the inventory. The excerpts were based on songs that appeared in Billboard charts when participants were between 7 and 19 years old. After each excerpt, participants received (among other measures) a list of 34 emotion words and were instructed to choose those that were applicable. Nostalgia emerged as the third most applicable emotional reaction, subsequent to happy and youthful. Similarly, in a study by Olsen et al. (2020), nostalgia was one of six positive emotions elicited by classical music compared to violent rap and extreme metal music.

As another example of music as a source of nostalgia, Juslin et al. (2008) examined music-evoked emotions as experienced in daily life. Participants were provided with a palmtop (i.e., handheld computer) to be carried with them at all waking hours, programmed to emit a sound signal seven times per day at random intervals for 2 weeks. Whenever the palmtop beeped, participants completed a questionnaire on the palmtop's user interface, indicating (among other questions) whether they were listening to music in that particular moment, and whether the music affected their emotions. In addition, participants selected the emotion they felt from a list of 13 options. Nostalgia was the fourth most frequently experienced emotion during musical emotion episodes (i.e., moments that featured music), following happiness, contentment, and interest. Moreover, happiness and nostalgia were more frequent during musical emotion episodes than non-musical episodes. Conversely, negatively toned emotions, such as anger or anxiety, were more common during non-musical than musical emotion episodes, suggesting that the distribution of music-evoked emotions is skewed toward positive ones, including nostalgia. This finding is consistent with data that negative emotions are experienced rather infrequently in response to music (Juslin & Laukka, 2004).

Nostalgia's prominence among music-evoked emotions was also illustrated in a series of studies by Zentner et al. (2008). To identify emotions most frequently induced by music, the authors distinguished between musically relevant emotions (e.g., joy, inspiration) and non-musical emotions (e.g., guilt, jealousy) from a list of 515 emotion terms. Nostalgia was the eighth most frequently reported emotion from a list of 66 musically relevant emotional responses. A subsequent survey by the same authors indicated that 32% of music-festival visitors experienced nostalgia somewhat or a lot during their attended performances. Last, these authors examined the structure of music-evoked emotions using factor analysis of emotion ratings. The ensuing nine-factorial model of music-evoked emotions included nostalgia and a

central feature of nostalgia and tenderness (Hepper et al., 2012), among others. Taken together, music is a prevalent and impactful source of nostalgia.

On the psychological benefits of music-evoked nostalgia

Two major properties of nostalgia have emerged in the literature. These properties are associated with distinct empirical traditions. According to the first property, experimentally induced nostalgia instigates approach motivation, with positive consequences for psychological well-being (Sedikides & Wildschut, 2020). According to the second property, nostalgia acts as a buffer against noxious stimuli, also with positive consequences for psychological well-being (Wildschut & Sedikides, 2020). We followed these two empirical strands in reviewing the psychological benefits of music-evoked nostalgia.

We conducted a search of electronic databases (i.e., PsycINFO, PsycARTICLES, SocINDEX) to identify relevant articles. Search terms included music-evoked nostalgia, music-elicited nostalgia, music-induced nostalgia, music-instigated nostalgia, music-produced nostalgia, nostalgic music, nostalgic lyrics, as well as nostalgia and music. We identified additional articles by scanning the reference lists of included articles. To be included in our review, articles ought to meet the following criteria: (1) be accessible online, (2) be written in English, and (3) be reporting primary (quantitative or qualitative) data. We limited our review to published articles. We were able to locate two unpublished Master's theses on the topic, but we excluded them, as they reported preliminary results based on very small sample sizes. Publication years of our reviewed articles ranged from 1989 to 2021.

The approach motivation property of music-evoked nostalgia

Approach motivation, “the energization of behavior by, or the direction of behavior toward, positive stimuli (objects, events, possibilities)” (Elliot, 2006, p. 111), affects human functioning in a variety of life domains (Elliot, 2008a). The emotion of nostalgia is inherently approach-oriented, as a multidimensional scaling analysis (Van Tilburg et al., 2018a) and correlational findings (Stephan et al., 2014, Studies 1–2) have attested. Experimental tests converged on this conclusion. Stephan et al. (2014, Study 3) induced nostalgia with the Event Reflection Task (Sedikides et al., 2015a; Wildschut et al., 2006). Participants in the experimental condition brought to mind a nostalgic event from their lives, reflected on it briefly, and narrated it in writing. Participants in the control condition did the same, but for an ordinary or regular autobiographical event. Nostalgic (compared to control) participants manifested stronger approach motivation, as measured by the 13-item Behavioral Activation Scale (Carver & White, 1994; for example, “I go out of my way to get things I want,” “I will often do things for no other reason than that they might be fun”). Given that the effects of nostalgia appear to generalize across modality (i.e., the manner in which the emotion is induced; Sedikides et al., 2015a), we assumed that music-evoked nostalgia would also galvanize approach motivation, with downstream consequences in various life domains. Consistent with this assumption, approach motivation underlies effects in several life domains, including the social, self-oriented, and existential ones (Elliot, 2008b; Sedikides & Wildschut, 2020; Steger et al., 2008; Stephan et al., 2014; Tice & Masicampo, 2008).

Music-evoked nostalgia and the social domain. Inductions of nostalgic music (or equivalent, such as nostalgic song lyrics) are based on the notion that ensuing emotional reactions often reflect associations between the music and autobiographical experiences (Juslin & Laukka, 2004). Given the social and cultural ubiquity of music, autobiographical memories intertwine with

musical experiences (Michels-Ratliff & Ennis, 2016). Re-experiencing a piece of music after a period of time can instigate emotionally laden memories of loved ones or events (e.g., family picnics, vacations with friends or partners, cultural scripts such as Thanksgiving holidays) populated by loved ones (Batcho, 2007; Elvers, 2016; Wildschut et al., 2006). Nostalgic music or lyrics may be an “esthetic surrogate” to social interaction (Elvers, 2016, p. 1). In addition, as a survey of Dutch community members indicated, bringing to mind a nostalgic song is associated with social connectedness (i.e., “feeling connected with the people I care about”; Hart et al., 2011, Study 3).

Cheung et al. (2013, Study 4) examined whether music-evoked nostalgia has a causal influence on social connectedness. In a preliminary session, participants read the New Oxford Dictionary definition of nostalgia, and then wrote down the title and performing artist names of three songs that made them feel nostalgic. Following random allocation to the experimental or control conditions, participants were invited to the laboratory 3 weeks later. For participants in the experimental condition, Cheung et al. retrieved the lyrics of one of the three songs (randomly determined) described previously as nostalgic. The researchers then yoked these participants to corresponding ones from the control condition; so, each participant in the control condition received the same song lyrics as one in the experimental condition, but only participants in the nostalgia condition had previously identified the song as being personally nostalgic. Subsequently, participants read the relevant song lyrics and completed a manipulation check that assessed felt nostalgia. (In this and all subsequent experiments, checks confirmed the effectiveness of the manipulation, that is, music-induced nostalgia.) Last, participants completed a measure of social connectedness (Nostalgia Functions Scale; Hepper et al., 2012, Study 7); that is, they indicated the extent to which they momentarily felt loved, protected, connected to loved ones, and trusting of others. Nostalgic participants reported higher levels of social connectedness than controls. Music-evoked nostalgia fosters social connectedness.

Music-evoked nostalgia and the self-oriented domain. As we mentioned above, re-experiencing music can trigger emotionally laden autobiographical memories (Juslin & Laukka, 2004; Michels-Ratliff & Ennis, 2016). These memories may pertain to momentous life events. Although close others are almost always symbolically present in nostalgic recollection, the events are presided over by the self: They are narrated from a first-person perspective, with the self as a protagonist (Abeyta et al., 2015; Madoglou et al., 2017; Wildschut et al., 2006). Similarly, nostalgic song lyrics refer to identity (Batcho, 2007), and participating in nostalgic organized singing (e.g., barbershop choruses and quartets) may in part be a means to affirm one’s identity (Nash, 2012; see also Abakoumkin et al., 2020). Last, the aforesaid survey of Dutch community members (Hart et al., 2011, Study 3) showed that bringing to mind a nostalgic song is associated with self-esteem (i.e., “feeling good about myself”), the extent to which a person likes, appreciates, or values themselves (Sedikides & Gregg, 2003).

Several lines of research document that music-evoked nostalgia serves (i.e., causally influences) self-oriented functions. One such line concerns self-esteem. Participants in Cheung et al. (2013, Study 4), having been exposed to nostalgic versus non-nostalgic song lyrics, also completed a measure of self-esteem (Nostalgia Functions Scale; Hepper et al., 2012, Study 7); that is, they stated the extent to which they momentarily felt good about themselves, liked themselves better, had many positive qualities, and liked themselves more. Nostalgic (vs. control) participants reported higher self-esteem.

These findings were replicated in a study involving Dutch radio listeners and a different induction of nostalgia (Cheung et al., 2013, Study 3). Participants listened, via a media player in their Internet browser, either to a nostalgic or control song (the song classification was based

on a pretest). The songs, released in 1974 and 1965 respectively, were performed by the same artist, Wim Sonneveld. In the nostalgic song, *Het Dorp (The Village)*, the artist reflects longingly on his childhood growing up in a small village in the south of The Netherlands. In the control song, *Nikkelen Nelis (Nickeled Nelis)*, the artist regales the listener with a tongue-in-cheek description of a flirtatious woman. Participants who listened to the nostalgia song (compared to those who listened to the control song) reported higher self-esteem (“feel good about myself,” “satisfied with myself”).

Music-evoked nostalgia impacts causally on another self-oriented function, sense of youthfulness (Abeyta & Routledge, 2016, Study 1). Participants selected songs on YouTube. Those in the experimental condition selected a song that made them feel nostalgic, whereas those in the control condition selected a song that they enjoyed. Subsequently, all participants reported their subjective age (“At times, people feel older or younger than they actually are. At this moment, what age do you feel?”). Nostalgic participants indicated that they felt younger than controls.

Finally, nostalgia strengthens two future-oriented self-functions: optimism and inspiration. Optimism refers to the generalized proclivity to anticipate positive outcomes even in the face of obstacles (Scheier & Carver, 1985). Nostalgia, evoked via songs (Cheung et al., 2013, Study 3), increased optimism, measured with the items “optimistic about the future” and “hopeful about the future.” Likewise, nostalgia, evoked via song lyrics (Cheung et al., Study 4), raised optimism, this time measured with the six-item Revised Life Orientation Test (Scheier et al., 1994; for example, “In uncertain times, I usually expect the best,” “I’m always optimistic about my future”). Inspiration refers to the transcendence of mundane preoccupations, awareness of new possibilities or ideas, and desire to enact these possibilities or ideas (Thrash & Elliot, 2004). Nostalgia, evoked with the same song lyrics procedure as in Study 4 of Cheung et al. (2013), augmented inspiration (“feel inspired,” “inspires me to do something,” “fills me with inspiration”) compared to control (Stephan et al., 2015, Study 4).

Music-evoked nostalgia and the existential domain. The memories evoked by nostalgic music are personally relevant or meaningful, as they represent landmarks of one’s life (Sedikides & Wildschut, 2018; Wildschut et al., 2006). Furthermore, nostalgic lyrics feature mentions to meaning in life (Batcho, 2007), and song-evoked nostalgia is predicted by the degree to which the song is meaningful to begin with (Michels-Ratliff & Ennis, 2016).

Music-evoked nostalgia is related to meaning in life. In a survey, participants indicated the extent to which each of several popular songs made them feel nostalgic and also that “life is worth living” (an indicator of presence of meaning in one’s life; cf. Steger et al., 2006). The more nostalgic the song made participants feel, the more it made them feel that life is meaningful (Routledge et al., 2011, Study 1). Furthermore, music-evoked nostalgia directly influences meaning in life. In an experiment (Routledge et al., 2011, Study 2), participants read lyrics of songs they had previously identified as nostalgic or not, using the same procedure as Cheung et al. (2013, Study 4). Nostalgia participants reported higher meaning in life, as assessed with the five-item Presence of Meaning subscale of the Meaning in Life Scale (Steger et al., 2006; for example, “I have a good sense of what makes my life meaningful,” “My life has a clear sense of purpose”).

Music-evoked nostalgia also fulfills the existential function of self-continuity. As a synthesizer of experience (Atchley, 1989; Troll & Skaff, 1997), self-continuity protects from death anxiety by providing a sense of order and personal significance (Landau et al., 2008, 2009). In a relevant experiment (Sedikides et al., 2016, Study 1), participants read song lyrics that they had designated as nostalgic or not (as per Cheung et al., 2013, Study 4). Nostalgic participants

indicated greater self-continuity, measured with the four-item Self-Continuity Index (e.g., “I feel connected with who I was in the past,” “I feel that important aspects of my personality remain the same across time”).

Downstream consequences of music-evoked nostalgia. So far, we discussed the direct effects of music-evoked nostalgia in the social, self-oriented, and existential domains. However, music-evoked nostalgia also exerts indirect effects, where its impact on one function cascades down to others. These indirect effects provide complementary accounts on how music-evoked nostalgia may affect psychological processes.

A case in point is research by Cheung et al. (2013, Study 4). Initially, music-evoked nostalgia fostered social connectedness. According to several empirically validated theoretical statements (sociometer theory: Leary & Baumeister, 2000; terror-management theory: Solomon et al., 2015; contingencies of self-worth: Crocker & Knight, 2016), social connectedness is a strong basis for self-esteem. Indeed, the effect of music-evoked nostalgia was partially transmitted to self-esteem via social connectedness. Also, according to literature, self-esteem is an antecedent of optimism (Chemers et al., 2000; Mäkikangas & Kinnunen, 2003; Mäkikangas et al., 2004). Indeed, the effect of music-evoked nostalgia on optimism was transmitted, in part, by self-esteem.

Nostalgia is a wellspring of social connectedness (Green et al., 2021; Sedikides & Wildschut, 2019). Social connectedness (e.g., good relationships with family, friends, or partners), in turn, underlies other relevant psychological processes. For example, social connectedness serves as platform or safe haven from which one can engage in exploration (Green & Campbell, 2000; Luke et al., 2012). As such, music-evoked nostalgia fosters social connectedness, which in turn is linked to rises in inspiration (Stephan et al., 2015, Study 4). Also, social connectedness is a source of meaning in life (Hicks et al., 2010; Lambert et al., 2010). As such, music-evoked nostalgia fosters social connectedness, which in turn is associated with meaning (Routledge et al., 2011, Study 2). Finally, social connectedness can engender a sense of continuity in one’s life, as the trajectory of one’s long-term relationships reflects the trajectory of one’s life, facilitating perceptions of the self as having embarked on a continuous (rather than interrupted) journey (Andersen & Chen, 2002; Landau et al., 2010). As such, music-evoked nostalgia fosters social connectedness, which subsequently conduces to self-continuity (Sedikides et al., 2016, Study 1).

The buffer property of music-evoked nostalgia

Given that nostalgia consolidates social connectedness, self-oriented processes, and existential processes, it can serve as a buffer against aversive states (Wildschut et al., 2011; Wildschut & Sedikides, 2020). Put otherwise, aversive states, such as sadness, can elicit nostalgia. In research by Wildschut et al. (2006, Study 2), participants identified negative affect as a prominent trigger of nostalgia. In a subsequent experiment (Wildschut et al., 2006, Study 3), participants placed in a negative mood reported being more nostalgic than those placed in a neutral or positive mood.

Does sad music evoke nostalgia? In a qualitative investigation, four of the five participants stated that sad mood often makes them feel nostalgic (Garrido & Schubert, 2011). In a survey (Taruffi & Koelsch, 2014), participants were asked about the emotions they experience when listening to sad music and the circumstances under which they listen to it. Of them, 76% indicated that they experience nostalgia when listening to sad music and that they choose to listen to it when they feel lonely or are under distress (e.g., relationship dissolution, death of a loved one).

Research has addressed more directly the question of whether sad music evokes nostalgia. In a study by Garrido and Schubert (2015), participants varying on rumination and reflection (Trapnell & Campbell, 1999) self-selected a piece of sad music and listened to it. Both rumination and reflection predicted nostalgia, assessed with the statement "It [the music] made me think of past events in my life, and this nostalgia was a bittersweet experience." In a study by Barrett et al. (2010), after filling out a measure of transient affect (Positive and Negative Affect Schedule or PANAS; Watson et al., 1988), each participant listened to 30 song excerpts from the Billboard Top-100 Pop, Hip Hop, and R&B list. The songs were randomly selected from a total of 1,112 excerpts, and the release date was matched to the participant's adolescent years. After each song, participants rated the degree to which the song made them feel nostalgic. Negative affect predicted music-evoked nostalgia, whereas positive affect did not. Put otherwise, participants who entered the study in a more negative mood were more likely to experience music-evoked nostalgia.

Listening motives may play a role in the experience of music-evoked nostalgia. In a study by Juslin et al. (2008), participants' motives to listen to music were related to the emotions elicited by music. For example, the motive to relax was linked with calm or content emotions, whereas the motive to influence one's emotions was linked with sad or melancholic emotions. Concerning music-evoked nostalgia, these findings imply that, when people experience negative mood, they may deliberately seek to listen to a nostalgic song in order to profit from the mood-elevating capacity of nostalgia.

Still, research on music-evoked nostalgia as a buffer to aversive states is in its infancy. Drawing from the regulatory model of nostalgia (Sedikides et al., 2015a), discomfiting states such as negative affect, social exclusion or loneliness, self-uncertainty or self-doubt, and meaninglessness or self-discontinuity (a sense of disjunction between one's past and present; Sedikides et al., 2015b) would invoke a preference for music-evoked nostalgia, which in turn would alleviate discomfort, establishing psychological equilibrium. Preliminary support for this proposal has been reported in study by Gibbs and Egermann (2021) conducted in the United Kingdom during the Covid-19 lockdown, a period characterized by relatively high levels of psychological distress (e.g., loneliness, unhappiness, depression, anxiety; Enea et al., 2021; Rettie & Daniels, 2021; Xin et al., 2020; Zacher & Rudolph, 2020). Participants listened to familiar, self-selected music, which elicited nostalgia. They then wrote a narrative and reported their emotion-regulation strategies (Fancourt et al., 2019). Participants' narratives were mostly positive, with undertones of bittersweetness. Their emotion-regulation strategies were revealing. They engaged in avoidance, focusing on a happier than unhappier past. They also engaged in approach, confronting present experiences and attempting to cope with them. Last, they engaged in self-development, that is, striving to improve and reaffirm a sense of selfhood.

Additional issues and future research directions

Music-evoked nostalgia in people with dementia

The term dementia refers to a neurodegenerative syndrome caused by a brain malfunction such as Alzheimer's disease, frontal-temporal dementia, or vascular dementia. Dementia results in disturbance of multiple higher cortical functions, including comprehension, language, and judgment (Dugu et al., 2003). Most forms of dementia reduce gradually one's ability to recall autobiographical memories accurately (Morris & Mograbi, 2013). Yet, people with mild or moderate stages of dementia can retrieve such memories when they need to confirm being the same person at present and before the onset of dementia (El Haj et al., 2019), people

with Alzheimer's disease value reliving autobiographical memories (El Haj & Antoine, 2017), and people with dementia judge recalled autobiographical events as higher on emotionality (i.e., "I can feel now the emotions I felt then") and importance (i.e., "This memory is significant for my life") than healthy controls (El Haj et al., 2016). It is possible, then, that nostalgic autobiographical memories will be functional for people living with dementia.

Ismail et al. (2018, Experiment 2) addressed this possibility by inducing nostalgia via songs. In doing so, they capitalized on research indicating that musical memories are often preserved in persons with dementia, as brain areas associated with musical memories are relatively unharmed by the disease (Jacobsen et al., 2015). In particular, Ismail et al. used the yoked design of Cheung et al. (2013, Study 4), albeit by playing the songs rather than presenting participants with the song lyrics. Participants in the music-evoked nostalgia condition (vs. control) reported stronger nostalgia benefits in the social domain (i.e., social connectedness), self-oriented domain (i.e., self-esteem, optimism), and existential domain (i.e., meaning in life, self-continuity). These findings have interventional implications. For example, nostalgic music—selected by the person with dementia or their relatives—can be played at regular intervals to increase psychological well-being.

Individual differences

Individual differences are relevant to music-evoked nostalgia (Vuoskoski & Eerola, 2011). A key variable is dispositional nostalgia, addressed by Batcho (2007). Participants completed the Nostalgia Inventory (Batcho, 1995), indicating the extent to which they missed 20 objects (e.g., TV shows, movies, my family house, vacations I went on, the way society was) from their youth. Then they rated six sets of lyrics on a variety of dimensions. Participants high on dispositional nostalgia expressed a preference for lyrics that were characterized by other-directed (than solitary) themes, had higher personal relevance, were meaningful, and were happy. Barrett et al. (2010) were also interested in dispositional nostalgia, which they measured with the seven-item Southampton Nostalgia Scale (Sedikides et al., 2015a). Three scale items assess the degree to which participants find nostalgia significant, important, and valuable, whereas four items assess proneness to nostalgia or frequency of nostalgic engagement. Dispositional nostalgia emerged as a robust predictor of music-evoked nostalgia. High nostalgics experienced music-evoked nostalgia more intensely than low nostalgics. These findings suggest that high nostalgics may derive more psychological benefits from music-evoked nostalgia than low nostalgics.

Barrett et al. (2010) examined in addition the relation between music-evoked nostalgia and the Five-Factor model of personality traits, assessed by the Big Five Inventory (John et al., 2008). No personality trait predicted music-evoked nostalgia, although the association between neuroticism and level of music-evoked nostalgia was positive and trending. This association was reflected in a positive correlation between neuroticism and dispositional nostalgia. It is possible that high neurotic individuals engage more frequently in nostalgia to alleviate their discomfort. Relatedly, Kallinen and Ravaja (2004) found that highly neurotic individuals listening to music manifested greater positive activation of self-reported mood (measured with the sum of "energetic and peppy" minus the sum of "bored and vegetated" of the PANAS; Watson et al., 1988), and greater activation of electroencephalographic and cardiovascular indices. Similarly, Juslin et al. (2008) found in an Experience Sampling Method study that neuroticism was positively correlated with music-induced emotions that fell within the pleasure-enjoyment range. Moreover, Chamorro-Premuzic and his associates (Chamorro-Premuzic & Furnham, 2007; Chamorro-Premuzic et al., 2009) reported that highly neurotic individuals were more likely to use music for emotion-regulation purposes. Research will need to test whether highly neurotic

individuals are more influenced by music-evoked nostalgia and use music-evoked nostalgia for regulatory reasons. Likewise, research will need to address whether individuals high on harmonious passion (vs. obsessive passion; Bonneville-Roussy & Vallerand, 2020) are disproportionately influenced by music-evoked nostalgia and implement it for self-regulatory purposes (Olsen et al., 2020).

Context

Some researchers have addressed the role of context: how various songs in differing situations may conduce to intensifying music-evoked nostalgia. Barrett et al. (2010) investigated music-evoked nostalgia as a function of context-level constructs, that is, (a) characteristics of an individual's relationship to a particular song, and (b) an individual's emotional experience while listening to a given song, including familiarity with it, autobiographical salience, and the structure of the experience. Autobiographical salience was the strongest predictor of music-evoked nostalgia, but song familiarity also predicted the intensity of nostalgia while listening to music. In terms of the structure of the experience, and consistent with the literature (Frankenbach et al., 2021; Leunissen et al., 2021), nostalgia emerged as predominantly positively toned with elements of negativity. The number of positive, negative, and mixed emotions predicted the intensity of music-evoked nostalgia; positive emotions, however, were a much stronger predictor than negative or mixed emotions. Interestingly, context-level constructs were much stronger predictors of music-evoked nostalgia than person-level constructs. This finding suggests that music-evoked nostalgia is primarily influenced by situational and emotional determinants, and secondarily by personality factors. The finding is reminiscent of reports that virtually everybody experiences nostalgia and does so frequently (i.e., several times a week; Hepper et al., 2021; Wildschut et al., 2006). Regardless, the findings vouch for the generality of psychological benefits that music-evoked nostalgia confers.

Other researchers have addressed the role of environmental factors in the experience of musical emotions. For example, Pettijohn et al. (2010) examined whether music preferences vary with the seasons. The literature had indicated that most individuals exhibit a winter mood pattern, including lower mood, energy level, and social activity (Rohan & Sigmon, 2000). Accordingly, wintertime may be more associated with reflective behavior and introspection compared to warmer and brighter seasons. Pettijohn et al. therefore expected participants to manifest stronger preferences for music classifiable as reflective and complex (e.g., jazz, blues, classical, folk; Rentfrow & Gosling, 2003) during the winter than summer. After being primed with either a typical winter scenario or typical summer scenario, participants reported the music genre to which they would listen in that particular scenario. Participants exposed to a winter scenario preferred reflective and complex music, whereas those exposed to a summer scenario preferred energetic and rhythmic music, pointing to environmental influences of musical preferences. Drawing on these findings, winter may affect people's motives (Juslin et al., 2008) to listen to autobiographically salient music, which facilitates introspection and reflection, thus stimulating nostalgia and reaping its benefits. This suggestion is consistent with research by Van Tilburg et al. (2018b). In two experiments, they found that adverse weather (i.e., wind, thunder, and rain sounds vs. neutral sounds) elicited not only distress but also nostalgia; in turn, nostalgia contributed to a reduction of distress. They replicated these results in a diary study. Finally, in another experiment, they reported that weather elicited nostalgia, which was subsequently associated with psychological benefits (e.g., social connectedness, self-esteem, optimism, self-continuity, meaning in life).

Seasons may not be the only environmental influence on musical preferences and musical emotions. Juslin et al. (2008; see also Thompson & Larson, 1995) suggested that emotional

reactions to music depend on physical location, type of activity in which participants engage, and whether other people are present while one listens to music. Yet, musical emotions appeared not to be dependent on specific situations, and were experienced in a wide array of locations and contexts. Intriguingly, however, the prevalence of specific music-evoked emotions was influenced by the context of listening. For example, emotions such as *happiness-elation*, *pleasure-enjoyment*, and *anger-irritation* were more prominent in social situations (e.g., being with friends), whereas emotions such as *nostalgia-longing*, *calm-contentment*, and *sadness-melancholy* were more frequently experienced when being alone. This finding reinforces the potential of music-evoked nostalgia to act as a buffer against daily hassles when the individual is socially isolated.

Physiological states

We argued that music-evoked nostalgia confers psychological benefits. But does it confer physiological benefits? Zhou et al. (2012, Study 3) argued that it does. In a survey, participants listened in their Web browser to four popular songs, selected because they covered themes of love and personal loss with evocative lyrics. After each song, participants indicated how nostalgic it made them feel and whether it produced the physical sensation of warmth.

Higher levels of music-evoked nostalgia predicted greater perceived physical warmth. Nostalgia may act as a surrogate of psychological warmth, conferring homeostatic comfort by simulating a felicitous body state as if it were occurring (i.e., the “as-if body loop” mechanism; Damasio, 1993), and thus creating the subjective impression of greater physical warmth. The physiological benefits of music-evoked emotion in general, and nostalgia in particular constitutes a promising area of research.

Music familiarity

Researchers have linked song familiarity with its potential to elicit nostalgia (Barrett et al., 2010). But is familiarity with music necessary for nostalgia to be felt? We argued that it is not so, for two reasons. To begin, music-evoked nostalgia can be transmitted indirectly, via emotional contagion, the process through which emotions are mimicked (Hatfield et al., 1993). Recent research has shown that nostalgia is a contagious emotion. In a study conducted by Wildschut et al. (2018), young-adult coders felt more nostalgic after reading nostalgia than control narratives written by older adults. Hence, it is possible that others’ nostalgic states (having been transmitted through music) can influence an individual accordingly. More to the point, aspects of music, albeit unfamiliar, can be nostalgic. An example is the Portuguese genre *Fado* or *Coladeira*. Research should address whether unfamiliar music, intended to be nostalgic by its composers, can not only evoke nostalgia but also confer psychological benefits, perhaps by buffering discomfoting states.


Concluding notes

Considered throughout centuries as a neurological disease or a psychiatric disorder, nostalgia has come back as of late. Instead of being an ailment, it is considered a strength. The study of music-evoked nostalgia, in particular, albeit in its infancy, indicates that the emotion confers numerous psychological benefits and acts as a buffer against adversity. Indeed, if we were in a position to advise the commanders of S. Miller Thompson on that cold January day in 1863, we would instruct them to let the bands play nostalgic music.

Funding

The author(s) received no financial support for the research, authorship, and/or publication of this article.

ORCID iD

Constantine Sedikides  <https://orcid.org/0000-0003-4036-889X>

References

- Abakoumkin, G., Wildschut, T., & Sedikides, C. (2020). Nostalgia proneness and the collective self. *Frontiers in Psychology, 11*, Article 570621. <https://doi.org/10.3389/fpsyg.2020.570621>
- Abeyta, A. A., & Routledge, C. (2016). Fountain of youth: The impact of nostalgia on youthfulness and implications for health. *Self and Identity, 15*(3), 356–369. <https://doi.org/10.1080/15298868.2015.1133452>
- Abeyta, A. A., Routledge, C., Roylance, C., Wildschut, R. 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>
- Andersen, S. M., & Chen, S. (2002). The relational self: An interpersonal social-cognitive theory. *Psychological Review, 109*(4), 619–645. <https://doi.org/10.1037/0033-295X.109.4.619>
- Anderson, D. (2010). Dying of nostalgia: Homesickness in the Union Army during the Civil War. *Civil War History, 56*(3), 247–282. <https://doi.org/10.1353/cwh.2010.0001>
- Atchley, R. C. (1989). A continuity theory of normal aging. *The Gerontologist, 29*(2), 183–190. <http://dx.doi.org/10.1093/geront/29.2.183>
- Barrett, F. S., Grimm, K. J., Robins, R. W., Wildschut, T., Sedikides, C., & Janata, P. (2010). Music-evoked nostalgia: Affect, memory, and personality. *Emotion, 10*(3), 390–403. <https://doi.org/10.1037/a0019006>
- Batcho, K. I. (1995). Nostalgia: A psychological perspective. *Perceptual and Motor Skills, 80*(1), 131–143. <https://doi.org/10.2466/pms.1995.80.1.131>
- 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>
- Batcho, K. I. (2013). Nostalgia: The bittersweet history of a psychological concept. *History of Psychology, 16*(3), 165–176. <https://doi.org/10.1037/a0032427>
- Belfi, A. M., Karlan, B., & Tranel, D. (2016). Music evokes vivid autobiographical memories. *Memory, 24*(7), 979–989. <https://doi.org/10.1080/09658211.2015.1061012>
- Blais-Rochette, C., & Miranda, D. (2016). Music-evoked autobiographical memories, emotion regulation, time perspective, and mental health. *Musicae Scientiae, 20*(1), 26–52. <https://doi.org/10.1177/1029864915626967>
- Boer, D., Fischer, R., Strack, M., Bond, M. H., Lo, E., & Lam, J. (2011). How shared preferences in music create bonds between people: Values as the missing link. *Personality and Social Psychology Bulletin, 37*(9), 1159–1171. <https://doi.org/10.1177/0146167211407521>
- Bonneville-Roussy, A., & Vallerand, R. J. (2020). Passion at the heart of musicians' well-being. *Psychology of Music, 48*(2), 266–282. <https://doi.org/10.1177/0305735618797180>
- Brockner, J. (1984). Low self-esteem and behavioral plasticity: Some implications of personality and social psychology. *Review of Personality and Social Psychology, 37*(1), 1732–1741. <http://dx.doi.org/10.1037/0022-3514.37>
- Carver, C. S., & White, T. L. (1994). Behavioral inhibition, behavioral activation and affective responses to impending reward and punishment: The BIS/BAS scales. *Journal of Personality and Social Psychology, 67*(2), 319–333. <https://doi.org/10.1037/0022-3514.67.2.319>
- Castelnuovo-Tedesco, P. (1980). Reminiscence and nostalgia: The pleasure and pain of remembering. In S. I. Greenspan & G. H. Pollack (Eds.), *The course of life: Psychoanalytic contributions toward understanding personality development: Vol. III: Adulthood and the aging process* (pp. 104–118). U.S. Government Printing Office.

- Chamorro-Premuzic, T., & Furnham, A. (2007). Personality and music: Can traits explain how people use music in everyday life. *British Journal of Psychology*, *98*(2), 175–185. <https://doi.org/10.1348/000712606X111177>
- Chamorro-Premuzic, T., Swami, V., Furnham, A., & Maakip, I. (2009). The Big Five personality traits and uses of music: A replication in Malaysia using Structural Equation Modeling. *Journal of Individual Differences*, *30*(1), 20–27. <https://doi.org/10.1027/1614-0001.30.1.20>
- Chemers, M. M., Watson, C. B., & May, S. T. (2000). Dispositional affect and leadership effectiveness: A comparison of self-esteem, optimism, and efficacy. *Personality and Social Psychology Bulletin*, *26*(3), 267–277. <https://doi.org/10.1177/0146167200265001>
- Cheung, W.-Y., Wildschut, T., & Sedikides, C. (2018). Autobiographical memory functions of nostalgia in comparison to rumination: Similarity and uniqueness. *Memory*, *26*(2), 229–237. <https://doi.org/10.1080/09658211.2017.1346129>
- Cheung, W. Y., Wildschut, T., Sedikides, C., Hepper, E. G., Arndt, J., & Vingerhoets, A. J. (2013). Back to the future: Nostalgia increases optimism. *Personality and Social Psychology Bulletin*, *39*(11), 1484–1496. <https://doi.org/10.1177/0146167213499187>
- Crocker, J., & Knight, K. M. (2016). Contingencies of self-worth. *Current Directions in Psychological Science*, *14*(4), 200–203. <https://doi.org/10.1111/j.0963-7214.2005.0036.x>
- Damasio, A. R. (1993). *Descartes' error: Emotion, reason, and the human brain*. Putnam.
- Davis, F. (1979). *Yearning for yesterday: A sociology of nostalgia*. Free Press.
- Dodman, T. (2018). *What nostalgia was: War, empire, and the time of a deadly emotion*. The University of Chicago Press.
- Dugu, M., Neugroschl, J., Sewell, M., & Marin, D. (2003). Review of dementia. *The Mount Sinai Journal of Medicine*, *70*(1), 45–53.
- 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., Boudoukha, A., Antoine, P., Moustafa, 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>
- Elliot, A. J. (2006). The hierarchical model of approach-avoidance motivation. *Motivation and Emotion*, *30*(2), 111–116. <https://doi.org/10.1007/s11031-006-9028-7>
- Elliot, A. J. (2008a). Approach and avoidance motivation. In A. J. Elliot (Ed.), *Handbook of approach and avoidance motivation* (pp. 3–14). Psychology Press.
- Elliot, A. J. (Ed.) (2008b). *Handbook of approach and avoidance motivation*. Psychology Press.
- Elders, P. (2016). Songs for the Ego: Theorizing musical self-enhancement. *Frontiers in Psychology*, *7*, Article 2. <https://doi.org/10.3389/fpsyg.2016.00002>
- Enea, V., Eisenbeck, N., Petrescu, T. C., & Carreno, D. F. (2021). Perceived impact of quarantine on loneliness, death obsession, and preoccupation with God: Predictors of increased fear of COVID-19. *Frontiers in Psychology*, *12*, Article 643977. <https://doi.org/10.3389/fpsyg.2021.643977>
- Fancourt, D., Garnett, C., Spiro, N., West, R., & Müllensiefen, D. (2019). How do artistic creative activities regulate our emotions? Validation of the emotion regulation strategies for artistic creative activities scale (ERS-ACA). *PLOS ONE*, *14*(2), Article e0211362. <https://doi.org/10.1371/journal.pone.0211362>
- Fodor, N. (1950). Varieties of nostalgia. *Psychoanalytic Review*, *37*(1), 25–38.
- Frankenbach, J., Wildschut, T., Juhl, J., & Sedikides, C. (2021). Does neuroticism disrupt the psychological benefits of nostalgia? A meta-analytic test. *European Journal of Personality*, *35*(2), 249–266. <https://doi.org/10.1080/10.1002/per.2276>
- Frost, I. (1938). Homesickness and immigrant psychoses. *Journal of Mental Science*, *84*(352), 801–847.
- Garrido, S., Schubert, E., & Bangert, D. (2016). Musical prescriptions for mood improvement: An experimental study. *The Arts in Psychotherapy*, *51*, 46–53. <https://doi.org/10.1016/j.aip.2016.09.002>

- Garrido, S., & Schubert, F. (2011). Negative emotion in music: What is the attraction? A qualitative study. *Empirical Musicology Review*, 6(4), 214–230.
- Garrido, S., & Schubert, F. (2015). Moody melodies: Do they cheer us up? A study of the effect of sad music on mood. *Psychology of Music*, 43(2), 244–261. <https://doi.org/10.1177/0305735613591838>
- Gibbs, H., & Egermann, H. (2021). Music-evoked nostalgia and wellbeing during the United Kingdom COVID-19 pandemic: Content, subjective effects, and function. *Frontiers in Psychology*, 12, Article 647891. <https://doi.org/10.3389/fpsyg.2021.647891>
- Green, J. D., Cairo, A. H., Wildschut, T., & Sedikides, C. (2021). The ties that bind: University nostalgia fosters relational and collective university engagement. *Frontiers in Psychology*, 11, Article 580731. <https://doi.org/10.3389/fpsyg.2020.580731>
- Green, J. D., & Campbell, W. K. (2000). Attachment and exploration in adults: Chronic and contextual accessibility. *Personality and Social Psychology Bulletin*, 26(4), 452–461. <https://doi.org/10.1177/0146167200266004>
- Hart, C. M., Sedikides, C., Wildschut, T., Arndt, J., Routledge, C., & Vingerhoets, A. J. J. M. (2011). Nostalgic recollections of high and low narcissists. *Journal of Research in Personality*, 45(2), 238–242. <https://doi.org/10.1016/j.jrp.2011.01.002>
- Hatfield, E., Cacioppo, J. T., & Rapson, R. L. (1993). Emotional contagion. *Current Directions in Psychological Science*, 2(3), 96–100. <https://doi.org/10.1111/1467-8721.ep10770953>
- Hepper, E. G., Ritchie, T. D., Sedikides, C., & Wildschut, T. (2012). Odyssey's end: Lay conceptions of nostalgia reflect its original Homeric meaning. *Emotion*, 12(1), 102–119. <https://doi.org/10.1037/a0025167>
- Hepper, E. G., Wildschut, T., Sedikides, C., Ritchie, T. D., Yung, Y.-F., Hansen, N., Abakoumkin, G., Arikian, 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, J. J. M., & 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). The time capsule: Nostalgia shields wellbeing from limited time horizons. *Emotion*, 21(3), 644–664. <https://doi.org/10.1037/emo0000728>
- Hicks, J. A., Schlegel, R. J., & King, L. A. (2010). Social threats, happiness, and the dynamics of meaning in life judgments. *Personality and Social Psychology Bulletin*, 36(10), 1305–1317. <https://doi.org/10.1177/0146167210381650>
- Hofer, J. (1934). Medical dissertation on nostalgia (C. K. Anspach, Trans.). *Bulletin of the History of Medicine*, 2, 376–391. (Original work published 1688).
- Holak, S. L., & Havlena, W. J. (1992). Nostalgia: An exploratory study of themes and emotions in the nostalgic experience. *Advances in Consumer Research*, 19, 380–387.
- Holbrook, M. B. (1993). Nostalgia and consumption preferences: Some emerging patterns of consumer tastes. *Journal of Consumer Research*, 20(2), 245–256. <https://doi.org/10.1086/209346>
- Holbrook, M. B., & Schindler, R. M. (1989). Some exploratory findings on the development of musical tastes. *Journal of Consumer Research*, 16(1), 119–124. <https://doi.org/10.1086/209200>
- Hole, J., Hirsch, M., Ball, E., & Meads, C. (2015). Music as an aid for postoperative recovery in adults: A systematic review and meta-analysis. *Lancet*, 386(10004), 1659–1671. [https://doi.org/10.1016/S0140-6736\(15\)60169-6](https://doi.org/10.1016/S0140-6736(15)60169-6)
- Hunter, P. G., Schellenberg, E. G., & Griffith, A. T. (2011). Misery loves company: Mood-congruent emotional responding to music. *Emotion*, 11(5), 1068–1072. <https://doi.org/10.1037/a0023749>
- Irish, M., Cunningham, C. J., Walsh, J. B., Coakley, D., Lawlor, B. A., Robertson, I. H., & Coen, R. F. (2016). Investigating the enhancing effect of music on autobiographical memory in mild Alzheimer's Disease. *Dementia and Geriatric Cognitive Disorders*, 22, 108–120. <https://doi.org/10.1159/000093487>
- Ismail, S., Christopher, G., Dodd, E., Wildschut, T., Sedikides, C., Ingram, T. A., Jones, R. W., Nooman, 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>

- Jacobsen, J. H., Stelzer, J., Fritz, T., Chetelat, G., LaJoie, R., & Turner, R. (2015). Why musical memory can be preserved in advanced Alzheimer's disease. *Brain*, 38(8), 2438–2450. <https://doi.org/10.1093/brain/awv135>
- Janata, P., Tomic, S. T., & Rakowski, S. K. (2007). Characterisation of music-evoked autobiographical memories. *Memory*, 15(8), 845–860. <https://doi.org/10.1080/09658210701734593>
- Jiang, T., Cheung, W.-Y., Wildschut, T., & Sedikides, C. (2021). Nostalgia, reflection, brooding: Psychological benefits and autobiographical memory functions. *Consciousness and Cognition*, 90, Article 103017. <https://doi.org/10.1016/j.concog.2021.103107>
- John, O. P., Naumann, L. P., & Soto, C. J. (2008). Paradigm shift to the integrative Big Five trait taxonomy: History, measurement, and conceptual issues. In O. P. John, R. W. Robins & L. A. Pervin (Eds.), *Handbook of personality: Theory and research* (3rd ed., pp. 114–158). Guilford Press.
- Juslin, P. N., & Laukka, P. (2004). Expression, perception, and induction of musical emotions: A review and a questionnaire study of everyday listening. *Journal of New Music Research*, 33(3), 217–238. <https://doi.org/10.1080/0929821042000317813>
- Juslin, P. N., Liljeström, S., Västfjäll, D., Barradas, G., & Silva, A. (2008). An experience sampling study of emotional reactions to music: Listener, music, and situation. *Emotion*, 8(5), 668–683. <https://doi.org/10.1037/a0013505>
- Kallinen, K., & Ravaja, N. (2004). The role of personality in emotional responses to music: Verbal, electrocortical and cardiovascular measures. *Journal of New Music Research*, 33(4), 399–409. <https://doi.org/10.1080/0929821052000343868>
- Kerns, K. A., Brumariu, L. E., & Abraham, M. M. (2008). Homesickness at summer camp: Associations with the mother-child relationship, social self-concept, and peer relationships in middle childhood. *Journal of Developmental Psychology*, 54(4), 473–498.
- Lambert, N. M., Stillman, T. F., Baumeister, R. F., Fincham, F. D., Hicks, J. A., & Graham, S. M. (2010). Family as a salient source of meaning in young adulthood. *Journal of Positive Psychology*, 5(5), 367–376. <https://doi.org/10.1080/17439760.2010.516616>
- Landau, M. J., Greenberg, J., & Solomon, S. (2008). The never-ending story: A terror management perspective on the psychological function of self-continuity. In F. Sani (Ed.), *Self-continuity: Individual and collective perspectives* (pp. 87–100). Taylor & Francis.
- Landau, M. J., Greenberg, J., & Sullivan, D. (2009). Defending a coherent autobiography: When past events appear incoherent, mortality salience prompts compensatory bolstering of the past's significance and the future's orderliness. *Personality and Social Psychology Bulletin*, 35(8), 1012–1020. <http://dx.doi.org/10.1177/0146167209336608>
- Landau, M. J., Meier, B. P., & Keefer, L. A. (2010). A metaphor-enriched social cognition. *Psychological Bulletin*, 136(6), 1045–1067. <https://doi.org/10.1037/a0020970>
- Leary, M. R., & Baumeister, R. F. (2000). The nature and function of self-esteem: Sociometer theory. *Advances in Experimental Social Psychology*, 32, 1–62. [https://doi.org/10.1016/s0065-2601\(00\)80003-9](https://doi.org/10.1016/s0065-2601(00)80003-9)
- Leunissen, J. M., 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>
- Luke, M. A., Sedikides, C., & Carnelley, K. (2012). Your love lifts me higher! The energizing quality of secure relationships. *Personality and Social Psychology Bulletin*, 38(6), 721–733. <https://doi.org/10.1177/0146167211436117>
- 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(1), 60–88.
- Mäkikangas, A., & Kinnunen, U. (2003). Psychosocial work stressors and well-being: Self-esteem and optimism as moderators in a one-year longitudinal sample. *Personality and Individual Differences*, 35(3), 537–557. [https://doi.org/10.1016/S0191-8869\(02\)00217-9](https://doi.org/10.1016/S0191-8869(02)00217-9)
- Mäkikangas, A., Kinnunen, U., & Feldt, T. (2004). Self-esteem, dispositional optimism, and health: Evidence from cross-lagged data on employees. *Journal of Research in Personality*, 38(6), 556–575. <https://doi.org/10.1016/j.jrp.2004.02.001>

- Michels-Ratliff, E., & Ennis, M. (2016). This is your song: Using participants' music selections to evoke nostalgia and autobiographical memories efficiently. *Psychomusicology: Music, Mind, and Brain*, 26(4), 379–384. <https://doi.org/10.1037/pmu0000167>
- 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>
- Nash, J. E. (2012). Ringing the chord: Sentimentality and nostalgia among male singers. *Journal of Contemporary Ethnography*, 41(5), 581–606. <https://dx.doi.org/10.1177/0891241611429943>
- Newman, D. B., Sachs, M. E., Stone, A. A., & Schwarz, N. (2020). Nostalgia and well-being in daily life: An ecological validity perspective. *Journal of Personality and Social Psychology*, 118(2), 325–347. <https://doi.org/10.1037/pspp0000236>
- North, A. C., Hargreaves, D. J., & Hargreaves, J. J. (2004). Uses of music in everyday life. *Music Perception: An Interdisciplinary Journal*, 22(1), 41–77. <https://doi.org/10.1525/mp.2004.22.1.41>
- Olsen, K. N., Powell, M., Anic, A., Vallerand, R. J., & Thompson, W. F. (2020). Fans of violent music: The role of passion in positive and negative emotional experience. *Musicae Scientiae*. Advance online publication. <https://doi.org/10.1177/1029864920951611>
- Pearsall, J. (Ed.). (1998). *The New Oxford Dictionary of English*. Oxford University Press.
- Pettijohn, T. F., II, Williams, G. M., & Carter, T. C. (2010). Music for the seasons: Seasonal music preferences in college students. *Current Psychology*, 29, 328–345. <https://doi.org/10.1007/s12144-010-9092-8>
- Rathbone, C. J., Moulin, C. J. A., & Conway, M. A. (2008). Self-centered memories: The reminiscence bump and the self. *Memory & Cognition*, 36(8), 1403–1414. <https://doi.org/10.3758/MC.36.8.1403>
- Reid, C. A., Green, J. D., Wildschut, T., & Sedikides, C. (2015). Scent-evoked nostalgia. *Memory*, 23(2), 157–166. <https://doi.org/10.1080/09658211.2013.876048>
- Rentfrow, P. J., & Gosling, S. D. (2003). The do re mi's of everyday life: The structure and personality correlates of music preferences. *Journal of Personality and Social Psychology*, 84(6), 1236–1256. <https://doi.org/10.1037/0022-3514.84.6.1236>
- Rettie, H., & Daniels, J. (2021). Coping and tolerance of uncertainty: Predictors and mediators of mental health during the COVID-19 pandemic. *American Psychologist*, 76(3), 427–437. <http://dx.doi.org/10.1037/amp0000710>
- Rohan, K. J., & Sigmon, S. T. (2000). Seasonal mood patterns in a Northeastern college sample. *Journal of Affective Disorders*, 59(2), 85–96. [https://doi.org/10.1016/S0165-0327\(99\)00137-8](https://doi.org/10.1016/S0165-0327(99)00137-8)
- Routledge, C., Arndt, J., Wildschut, T., Sedikides, C., Hart, C. M., Juhl, J., Vingerhoets, A. J. J. M., & Scholtz, 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>
- Routledge, C., Wildschut, T., Sedikides, C., Juhl, J., & Arndt, J. (2012). The power of the past: Nostalgia as a meaning-making resource. *Memory*, 20(5), 452–460. <https://doi.org/10.1080/09658211.2012.677452>
- Rubin, D. C., & Schulkind, M. D. (1997). The distribution of autobiographical memories across the lifespan. *Memory & Cognition*, 25(6), 859–866. <https://doi.org/10.3758/BF03211330>
- Schaefer, H.-E. (2017). Music-evoked emotions—Current studies. *Frontiers in Neuroscience*, 11, Article 600. <https://doi.org/10.3389/fnins.2017.00600>
- Schäfer, T., Tipandjan, A., & Sedlmeier, P. (2012). The functions of music and their relationship to music preference in India and Germany. *International Journal of Psychology*, 47(5), 370–380. <https://doi.org/10.1080/00207594.2012.688133>
- Schäfer, T., Sedlmeier, P., Städtler, C., & Huron, D. (2013). The psychological functions of music listening. *Frontiers in Psychology*, 4, 511. <https://doi.org/10.3389/fpsyg.2013.00511>
- Scheier, M. F., & Carver, C. S. (1985). Optimism, coping, and health: Assessment and implications of generalized outcome expectancies. *Health Psychology*, 4(3), 219–247. <https://doi.org/10.1037/0278-6133.4.3.219>
- Scheier, M. F., Carver, C. S., & Bridges, M. W. (1994). Distinguishing optimism from neuroticism (and trait anxiety, self-mastery, and self-esteem): A re-evaluation of the Life Orientation Test. *Journal of Personality and Social Psychology*, 67(6), 1063–1078. <https://doi.org/10.1037/0022-3514.67.6.1063>

- Schulkind, M. D., Hennis, L. K., & Rubin, D. C. (1999). Music, emotion, and autobiographical memory: They're playing your song. *Memory & Cognition*, 27(6), 948–955. <https://doi.org/10.3758/BF03201225>
- Sedikides, C., & Gregg, A. P. (2003). Portraits of the self. In M. A. Hogg & J. Cooper (Eds.), *SAGE handbook of social psychology* (pp. 110–138). SAGE.
- 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. 25–136). 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. (2020). The motivational potency of nostalgia: The future is called yesterday. *Advances in Motivation Science*, 7, 75–111. <https://doi.org/10.1016/bs.adms.2019.05.001>
- Sedikides, C., Wildschut, T., Arndt, J., & Routledge, C. (2008a). Nostalgia: Past, present, and future. *Current Directions in Psychological Science*, 17(5), 304–307. <https://doi.org/10.1111/j.1467-8721.2008.00595.x>
- 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 the consequence (eudaimonic well-being). *Emotion*, 16(4), 524–539. <https://doi.org/10.1037/emo0000136>
- Sedikides, C., Wildschut, T., Routledge, C., & Arndt, J. (2015b). Nostalgia counteracts self-discontinuity and restores self-continuity. *European Journal of Social Psychology*, 45(1), 52–61. <https://doi.org/10.1002/ejsp.2073>
- Sedikides, C., Wildschut, T., Routledge, C., Arndt, J., Hepper, E. G., & Zhou, X. (2015a). To nostalgize: Mixing memory with affect and desire. *Advances in Experimental Social Psychology*, 51, 189–273. <https://doi.org/10.1016/bs.aesp.2014.10.001>
- Sloboda, J. A., & O'Neill, S. A. (2001). Emotions in everyday listening to music. In P. N. Juslin & J. A. Sloboda (Eds.), *Music and emotion: Theory and research* (pp. 413–429). Oxford University Press.
- Solomon, S., Greenberg, J., & Pyszczynski, T. (2015). *The worm at the core: On the role of death in life*. Random House.
- Steger, M. F., Frazier, P., Oishi, S., & Kaler, M. (2006). The meaning in life questionnaire: Assessing the presence of and search for meaning in life. *Journal of Counseling Psychology*, 53(1), 80–93. <https://doi.org/10.1037/0022-0167.53.1.80>
- Steger, M. F., Kashdan, T. B., Sullivan, B. A., & Lorentz, D. (2008). Understanding the search for meaning in life: Personality, cognitive style, and the dynamic between seeking and experiencing meaning. *Journal of Personality*, 76(2), 199–228. <http://dx.doi.org/10.1111/j.1467-6494.2007.00484.x>
- Stephan, E., Sedikides, C., Wildschut, T., Cheung, W. Y., Routledge, C., & Arndt, J. (2015). Nostalgia-evoked inspiration mediating mechanisms and motivational implications. *Personality and Social Psychology Bulletin*, 41(10), 1395–1410. <https://doi.org/10.1177/0146167215596985>
- Stephan, E., Wildschut, T., Sedikides, C., Zhou, X., He, W., Routledge, C., Cheung, W. Y., & Vingerhoets, A. J. J. M. (2014). The mnemonic mover: Nostalgia regulates avoidance and approach motivation. *Emotion*, 14(3), 545–561. <https://doi.org/10.1037/a0035673>
- Taruffi, L., & Koelsch, S. (2014). The paradox of music-evoked sadness: An online survey. *PLOS ONE*, 9(10), Article e110490. <https://doi.org/10.1371/journal.pone.0110490>
- Thompson, R. L., & Larson, R. (1995). Social context and the subjective experience of different types of rock music. *Journal of Youth and Adolescence*, 24(6), 731–744. <https://doi.org/10.1007/BF01536954>
- Thompson, S. M. (1888). *The thirteenth regiment of New Hampshire volunteer infantry in the war of the rebellion, 1861–1865*. Houghton-Mifflin.

- Thrash, T. M., & Elliot, A. J. (2004). Inspiration: Core characteristics, component processes, antecedents and function. *Journal of Personality and Social Psychology*, 87(6), 957–973. <https://doi.org/10.1037/0022-3514.87.6.957>
- Thurber, C. A., & Walton, E. A. (2007). Preventing and treating homesickness. *Child and Adolescent Psychiatric Clinics of North America*, 16(4), 843–858. <https://doi.org/10.1016/j.chc.2007.05.003>
- Tice, D. M., & Masicampo, E. J. (2008). Approach and avoidance motivations in the self-concept and self-esteem. In A. J. Elliot (Ed.), *Handbook of approach and avoidance motivation* (pp. 505–519). Psychology Press.
- Trapnell, P. D., & Campbell, J. D. (1999). Private self-consciousness and the five-factor model of personality: Distinguishing rumination from reflection. *Journal of Personality and Social Psychology*, 76(2), 284–304. <http://dx.doi.org/10.1037//0022-3514.76.2.284>
- Troll, L. E., & Skaff, M. M. (1997). Perceived continuity of self in very old age. *Psychology and Aging*, 12(1), 162–169. <http://dx.doi.org/10.1037/0882-7974.12.1.162>
- Van Tilburg, W. A. P., Sedikides, C., & Wildschut, T. (2018b). Adverse weather evokes nostalgia. *Personality and Social Psychology Bulletin*, 44(7), 984–995. <https://doi.org/10.1177/0146167218756030>
- Van Tilburg, W. A. P., Wildschut, T., & Sedikides, C. (2018a). Nostalgia's place among self-conscious emotions. *Cognition and Emotion*, 32(4), 742–759. <https://doi.org/10.1080/02699931.2017.1351331>
- Vuoskoski, J. K., & Eerola, T. (2011). Measuring music-induced emotion: A comparison of emotion models, personality biases, and intensity of experiences. *Musicae Scientiae*, 15(2), 159–173. <https://doi.org/10.1177/1029864911403367>
- 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, C., Sedikides, C., & Cordaro, F. (2011). Self-regulatory interplay between negative and positive emotions: The case of loneliness and nostalgia. In I. Nyklicek, A. J. J. M. Vingerhoets & M. Zeelenberg (Eds.), *Emotion regulation and well-being* (pp. 67–83). Springer.
- 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* (pp. 47–65). 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>
- Xin, M., Luo, S., She, R., Yu, Y., Li, L., Wang, S., Ma, L., & Lau, J. T.-f. (2020). Negative cognitive and psychological correlates of mandatory quarantine during the initial COVID-19 outbreak in China. *American Psychologist*, 75(5), 607–617. <http://dx.doi.org/10.1037/amp0000692>
- Zacher, H., & Rudolph, C. W. (2020). Individual differences and changes in subjective wellbeing during the early stages of the COVID-19 pandemic. *American Psychologist*, 76(1), 50–62. <https://doi.org/10.1037/amp000007>
- Zentner, M., Grandjean, D., & Scherer, K. R. (2008). Emotions evoked by the sound of music: Characterization, classification, and measurement. *Emotion*, 8(4), 494–521. <https://doi.org/10.1037/1528-3542.8.4.494>
- Zhou, X., Sedikides, C., Wildschut, T., & Gao, D.-G. (2008). Counteracting loneliness: On the restorative functions of nostalgia. *Psychological Science*, 19(10), 1023–1029. <https://doi.org/10.1111/j.1467-9280.2008.02194.x>
- Zhou, X., Wildschut, T., Sedikides, C., Chen, X., & Vingerhoets, A. J. J. M. (2012). Heartwarming memories: Nostalgia maintains physiological comfort. *Emotion*, 12(4), 678–684. <https://doi.org/10.1037/a0028236>