




Blinded by wistfulness: on how nostalgia strengthens attitudes

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ABSTRACT

Across four studies, we explored how feeling nostalgic about an attitude object impacts the metacognitive characteristics of the attitude toward that object and how those metacognitions predict the evaluation's underlying strength. In each study, participants reflected on and evaluated a song or television show that either did or did not elicit nostalgia. Across these studies, we found support for the hypotheses that nostalgic attitude objects are viewed more positively, appraised with greater attitudinal importance, and exhibited less objective ambivalence. In Study 4, we observed that nostalgic attitudes are associated with greater behavioural intentions and that this relationship was mediated both by attitudinal importance and objective ambivalence. These studies contribute to our understanding of how nostalgia affects attitude formation processes.

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Nostalgia, “a sentimental longing or wistful affection for the past” (Pearsall, 1998, p. 1266), has long fascinated researchers and laypeople alike. Recently, research has demonstrated that experiencing nostalgia is associated with myriad consequences (Sedikides et al., 2015), including bolstering self-esteem (Wildschut et al., 2006), increasing feelings of belonging (Wildschut et al., 2006; Zhou et al., 2008), fostering self-concept clarity and continuity (Jiang et al., 2020; Sedikides et al., 2016), facilitating greater well-being (Cox et al., 2015; Hepper et al., 2021; Naidu et al., 2023), and augmenting perceived meaning in life (Hepper et al., 2014; Reid et al., 2014; Routledge et al., 2011; van Tilburg et al., 2013). However, one issue receiving less empirical attention is the connection between nostalgia and attitudes (cf., Pascal et al., 2002). That is, how does feeling nostalgic about something (e.g. a song, a television show) influence the strength of one's opinion toward it? Do people hold especially positive evaluations toward meaningful objects from their past? The present research investigates these questions.

Attitudes and attitude strength

Attitudes are evaluations of attitude objects (e.g. people, consumer goods) that are relatively favourable or unfavourable in nature (Eagly & Chaiken, 1993). In addition to studying how people come to like or dislike attitude objects, researchers have examined what makes attitudes stronger. Specifically, strong attitudes are durable (i.e. resistant to persuasion and stable over time) and impactful (i.e. they influence behaviour and cognition; Krosnick & Petty, 1995; Luttrell & Sawicki, 2020). Many metacognitive variables predict attitude strength (Visser et al., 2006), including attitudinal importance (e.g. Eaton & Visser, 2008; Krosnick, 1988), attitudinal certainty (i.e. people's confidence in their attitude; e.g. Rucker et al., 2014), and ambivalence (i.e. the degree to which one simultaneously holds favourable and unfavourable evaluations toward an attitude object; e.g. Armitage & Conner, 2000). Ambivalence, in particular, has been studied at two levels: objective (or “potential”) and subjective (or “felt”) ambivalence (Priester & Petty, 1996). Specifically, objective

ambivalence is the degree to which people hold both positive and negative evaluations of an object (i.e. to what extent do they have simultaneous positive and negative attitudes), whereas subjective ambivalence is the psychological experience (i.e. affective response) of felt conflict or indecision regarding an object. These variables predict attitude strength. For example, less ambivalence (Armitage & Conner, 2000, 2004; Bassili, 1996) or more importance (Krosnick, 1988) typically reveals stronger attitudes.

Although many factors predict attitude strength, there does not seem to be one underlying dimension of attitude strength. Krosnick et al. (1993) examined whether common attitude strength indicators (e.g. certainty, importance, ambivalence, knowledge, extremity) could be reduced to a single psychological factor. They found that although these variables related to one another, a single underlying factor did not best explain the data, suggesting these metacognitive variables are not reducible. Thus, multiple metacognitions, each in their own way, seem to provide useful insights into what leads to stronger or weaker attitudes.

The current work explores how a particular emotion, nostalgia, affects attitude strength, which is an area where relatively little research has been conducted. Perhaps most relevant, researchers have examined how the emotionality of an attitude (i.e. the degree to which to which an attitude is rooted in feelings and emotional reactions; Rocklage & Fazio, 2016, 2018) predicts attitude strength outcomes. For example, attitudes predicated on greater emotionality are more stable over time (Rocklage & Luttrell, 2021) and are more predictive of behavioural intentions (Rocklage & Fazio, 2016). Thus, it seems that attitudes characterised by greater (rather than weaker) emotional feelings are stronger. However, it remains an open question as to how discrete emotions influence attitudes. To this end, the current research extends this past work by investigating how attitudes predicated on the emotion of nostalgia influence the underlying strength of those evaluations (Petty & Briñol, 2014).

Nostalgia

Nostalgia is a higher-order emotion felt when people think about pleasant, self-relevant, and often social memories. Nostalgia can be an ambivalent experience because individuals enjoy the pleasantness of their memories while simultaneously longing to relive

past events (Wildschut et al., 2006). van Tilburg et al. (2019) identified underlying cognitive appraisals of nostalgia, noting it includes pleasantness, irretrievable loss, psychological distance, and uniqueness. These characteristics distinguish nostalgia from general feelings of positivity. Thus, nostalgia stems from momentous, personally symbolic positive events that occurred in one's past.

Part of the scholarly interest in nostalgia stems from its effects on social cognitive processes. Nostalgia has been found to, among other outcomes, foster self-concept continuity (Jiang et al., 2020; Sedikides et al., 2016), strengthen social connectedness (Sedikides et al., 2016; Wildschut et al., 2006; Zhou et al., 2008), bolster meaning in life (Routledge et al., 2011, 2012), and enhance self-esteem (Wildschut et al., 2006). Furthermore, nostalgia affects perceptions of the self and social relationships (Sedikides et al., 2016), and its bittersweet nature leads to feeling joy while simultaneously experiencing sadness and longing (Sedikides et al., 2015; van Tilburg et al., 2019). Because nostalgia is experienced by virtually everyone (Boym, 2001) and is conceptualised similarly across cultures (Hepper et al., 2014), and because emotionally-based attitudes are particularly strong (Rocklage & Fazio, 2016, 2018; Rocklage & Luttrell, 2021), it seems reasonable that nostalgia impacts the formation and durability of evaluations toward nostalgic attitude objects.

The current research

Although nostalgia has been implicated in many social outcomes, little research has explored its influence on attitude formation and attitude strength. One exception is consumer behaviour research, which provided preliminary evidence that nostalgia influences attitudes. Pascal et al. (2002) found that participants who viewed nostalgia-evoking advertisements reported more positive attitudes toward them, more positivity toward the brand, and a greater likelihood of purchasing the product compared to participants who viewed non-nostalgia evoking advertisements. This work, however, did not explore the metacognitive components of attitudes, and it assessed responses to a *novel* attitude object where people did not have a personal nostalgic attachment to the attitude object itself. Thus, it is unclear whether these findings generalise to previously-held attitudes and nostalgic experiences and whether these emotional experiences affect metacognitive

properties of attitudes. In the current work, we hypothesised that attitudes toward objects that elicit feelings of nostalgia would be stronger than attitudes toward objects that do not elicit feelings of nostalgia.

Why might nostalgia serve this function? First, because nostalgic memories implicate one's self-concept (Baldwin et al., 2015; Baldwin & Landau, 2014; Sedikides et al., 2016) and meaningful social experiences (Abeyta et al., 2015), there should be a strong cognitive association between nostalgia evoking attitude objects and one's self-concept. Because people strive to maintain positive self evaluations (Baumeister et al., 2003; Taylor & Brown, 1988), they should actively reflect on nostalgic memories to reduce feelings of dissonance involving the self (Festinger, 1957). Accordingly, attitude objects that elicit relatively more nostalgia should reveal less conflicted evaluations (i.e. less ambivalence), have evaluations held with greater certainty, and be viewed as more important to the self, which are predictors of stronger attitudes. In other words, the extra reflection afforded to nostalgic attitude objects should result in enhanced processing undertaken to reduce cognitive dissonance, and this "wrestling with one's feelings toward nostalgic attitude objects" should produce stronger attitudes about them.

Indeed, these predictions are consistent with past research regarding nostalgia's self-oriented function. Specifically, nostalgia allows people to solidify their identities by evoking positive self-knowledge (e.g. self-esteem, self-attributes; Kaplan, 1987; Sedikides et al., 2015). Compared to people who reflect on a non-nostalgic memory (i.e. a memory from everyday life), people who reflect on nostalgic memories report more positive self-evaluations (Barrett et al., 2010; Cheung et al., 2013; Wildschut et al., 2006). Also, nostalgia can alleviate feelings of distress associated with low self-concept clarity (i.e. having an unclear and incoherent conception of one's self-concept), which is associated with feeling distress (Amiot et al., 2015; Slotter et al., 2010), and nostalgia can serve as a coping mechanism to restore self-concept clarity (Jiang et al., 2020).

Another route to understanding how nostalgia might affect one's attitudes is provided by the affect-as-information hypothesis (Schwarz & Clore, 1983; Isbell & Lair, 2013), which posits that people use current affective, cognitive, and physiological states to draw inferences that direct thoughts and behaviour. People's emotions stem from cognitive

appraisals, or how they evaluate situations related to their motivation and goal attainment (Ekman, 1992; Frijda, 1988, 1993; Keltner & Lerner, 2010; Lazarus, 1991; Smith & Ellsworth, 1985). By considering what appraisals are elicited when experiencing nostalgia, we can predict how nostalgia affects attitudes toward objects that elicit nostalgia as well as the attitude's underlying properties (e.g. metacognitions). As noted previously, nostalgia is rooted in appraisals of pleasantness, irretrievable loss (it is hard to accept that the nostalgic event has passed), uniqueness (the nostalgic memory relates to a special, momentous time in one's life), and psychological distance (the nostalgic event occurred in the past; van Tilburg et al., 2019). Thus, these appraisals might influence attitudes and associated metacognitions (certainty, importance, ambivalence) toward a nostalgic attitude object. Specifically, we predicted that attitude objects eliciting nostalgia should be evaluated more positively, as more important, with greater feelings of certainty in that evaluation, and less ambivalence compared to attitude objects that do not elicit nostalgia.

Regarding attitudinal certainty, past research has found that pleasant affect results in greater feelings of attitudinal certainty. For instance, Briñol et al. (2007) found that following exposure to a strong message, happy (compared to sad) participants demonstrated more positive attitudes and greater confidence (i.e. certainty) in their attitudes. Also, feelings of familiarity produces greater attitudinal certainty (e.g. Laroche et al., 1996). Because nostalgia is rooted in general appraisals of pleasantness and is an emotion predicated on recalling autobiographical memories (i.e. familiar stimuli), we predict that attitudes toward nostalgic objects should reveal greater attitudinal certainty.

Turning to attitudinal ambivalence, because nostalgia involves experiencing positive and negative affect simultaneously, one might anticipate that nostalgia should produce attitudinal ambivalence. However, nostalgia may actually lead to relatively *less* ambivalence. Despite nostalgia being described as an ambivalent emotion, the affect people report following nostalgia manipulations is relatively positive (Stephan et al., 2012). Similarly, Pascal et al. (2002) observed that nostalgic advertisements led to more positive attitudes toward products depicted in the advertisement. Taken together, past research suggests that nostalgic attitude objects should be associated with relatively less objective ambivalence

because they generally produce more positive and fewer negative feelings. When considering subjective ambivalence, nostalgia typically evokes positive self-knowledge (Sedikides et al., 2015) and reinforces one's identity by fostering self-concept clarity (Jiang et al., 2020; Sedikides et al., 2016). Thus, because subjective ambivalence reflects *felt* conflict or mixed emotions and because nostalgia provides experiences that solidify and clarify people's self-concepts, we predicted that nostalgia should result in relatively lower subjective ambivalence.

Finally, because nostalgia is rooted in appraisals of uniqueness, we predict greater attitudinal importance for nostalgic objects relative to non-nostalgic objects. Nostalgia increases perceptions of meaning in life (Routledge et al., 2012; Sedikides et al., 2015) and is often elicited when reminiscing about consequential life events (e.g. weddings, vacations, holidays; Sedikides et al., 2015; van Tilburg et al., 2019; Wildschut et al., 2006). Indeed, participants induced to experience nostalgia report greater meaning in life (Hepper et al., 2014; Reid et al., 2014; Routledge et al., 2011; van Tilburg et al., 2013). Also, experiencing nostalgia leads to increased optimism, presumably because nostalgia reminds the actor of past positivity and achievement, providing hope about the future (Cheung et al., 2013; Reid et al., 2014). Thus, because nostalgia enhances one's sense of meaning in life, we expect that nostalgic attitude objects should be viewed as important.

We tested these predictions across four studies featuring American undergraduate students. Although many approaches to inducing nostalgia have been used, including scents (e.g. Reid et al., 2014) and foods (e.g. Supski, 2013), we focused on media-related stimuli (e.g. music, television shows) because these manipulations have been used in past work (e.g. Routledge et al., 2011; Sedikides et al., 2015) and have broad applicability. It was predicted that nostalgic attitude objects would yield more positive attitudes, more attitudinal certainty and importance, and less attitudinal ambivalence compared to attitude objects that did not elicit feelings of nostalgia. Data, analysis scripts, and materials for all studies are available on this project's page on the Open Science Framework (<https://osf.io/m9sg3/>).

Study 1

Following Routledge et al. (2011), participants reflected on either a favourite (nostalgic) song or a

novel song that they had never heard previously. We predicted that participants who reflected on a nostalgic song would show relatively more favourable attitudes toward it and reveal greater attitude certainty, greater attitude importance, and less subjective and objective ambivalence.

Participants

One hundred and seven undergraduate students participated in the study for course credit (29.9% male, 67.3% female, 2.8% other or did not respond; 80% White; $M_{\text{age}} = 18.77$, $SD = .94$). Nine participants were excluded from analyses due to failing an attention check item (Aust et al., 2013), resulting in a final sample of 98 participants.¹

Nostalgia

Participants were randomly assigned to either reflect on a favourite song or to listen to a novel song. In the former condition, participants reported the title and recording artist of their favourite song. In the latter condition, participants listened to a novel Korean pop song ("On and On" by VIXX). All participants (US students) reported never hearing the novel song previously. Next, as a manipulation check, all participants responded to a measure of state nostalgia. This measure consists of three items assessing how nostalgic the song made them feel (e.g. "This song makes me feel nostalgic") on a scale ranging from 1 (not at all applicable to me) to 5 (highly applicable to me), and the mean response was computed ($\alpha = .96$) with larger scores reflecting more nostalgia.

Attitudes

Attitudes toward the song were assessed using four 11-point semantic differential scales. These scales are anchored at "not good at all", "not positive at all", "unfavorable", and "not like at all" at the low end of the scale (1) and "good", "positive", "in favor", and "like" at the positive end of the scale (11). The mean of the ratings ($\alpha = .96$) was computed to create an overall attitude index, with larger values reflecting more positive attitudes toward the song.

Metacognitions

Metacognitive variables were assessed using common measures of attitude certainty (Petrocelli et al., 2007), attitude importance (Wegener et al., 1995), and objective and subjective ambivalence (Priester & Petty,

1996). To assess *attitudinal certainty*, participants responded to four items (e.g. "How certain are you that you know what your true attitude toward the song really is?"; Petrocelli et al., 2007). Each item was assessed on an 11-point scale, and the mean response provided an overall attitude certainty index ($\alpha = .91$). *Attitudinal importance* was assessed by responding to the item "How important is this song to you?" on an 11-point scale anchored at 0 (not at all important) and 11 (extremely important; Wegener et al., 1995). *Objective ambivalence* was assessed using two items (Priester & Petty, 1996) where participants reported the extent that they had negative (or positive) thoughts toward the song while ignoring any positive (or negative) information, each on a 0 (no negative [positive] thoughts or feelings) to 10 (maximum negative [positive] thoughts or feelings) scale. Objective ambivalence was calculated using an established formula, $(POS + NEG) / 2 - |POS - NEG|$, where "POS" and "NEG" indicate responses to each single-valence item (Thompson et al., 1995). Scores on this measure can range from -5 to 10 , with greater scores reflect more objective ambivalence. Thus, although objective ambivalence was measured using self-report items of evaluation positivity and negativity, the score used in analyses provides an "objective" sense of how conflicted one's reported evaluations are for the attitude object (i.e. song). Finally, *subjective ambivalence* was calculated from responses on items asking participants about how "conflicted", "indecisive", and "mixed" they felt toward the song (Priester & Petty, 1996). These items used an 11-point scale, anchored at 1 (feeling no conflict/indecision/mixed feelings) and 11 (feel maximum conflict/indecision/mixed feelings), with the mean response ($\alpha = .91$) indicating greater subjective ambivalence.

Procedure

Participants arrived at the lab individually and they completed the study alone on a computer in individual cubicles. First, participants either reflected on a favourite song (nostalgia condition) or listened to the novel song via headphones connected to the computer. Next, participants then completed the manipulation check. Afterwards, participants reported their attitude toward the song and then responded to the metacognitive measures as described above. Finally, participants were thanked, debriefed, and dismissed.

Results and discussion

Nostalgia manipulation check

As expected, participants who reflected on their favourite song reported that the song made them feel more nostalgic ($M = 4.31$, $SD = 1.14$) than did participants who listened to the novel song ($M = 1.83$, $SD = 1.07$), $t(96) = 11.10$, $p < .001$, $d = 2.24$.

Relations among measures

As Table 1 reports, greater state nostalgia was associated with more positive attitudes, greater attitudinal certainty, and greater importance. Additionally, stronger state nostalgia was associated with less objective ambivalence, but it was unrelated to subjective ambivalence. Attitudes and metacognitive variables related to one another in ways consistent with past research (e.g. less ambivalence predicting greater certainty) with the exception of attitudes being unrelated to subjective ambivalence.

Between condition differences

As expected, participants who reflected on their favourite song reported more favourable attitudes ($M = 9.91$, $SD = 2.25$) than did participants who listened to the novel song ($M = 7.01$, $SD = 1.82$), $t(96) = 6.03$, $p < .001$, $d = 1.22$.

Regarding metacognitions, there were significant differences between the song conditions on attitudinal importance, attitudinal certainty, and objective ambivalence. As predicted, participants who reflected on their favourite song perceived the song as more important to them ($M = 8.90$, $SD = 2.27$) than did those who listened to the novel song ($M = 1.91$, $SD = 1.23$), $t(96) = 18.75$, $p < .001$, $d = 3.82$. Also, those who reflected on their favourite song reported greater attitudinal certainty ($M = 8.75$, $SD = 1.48$) than did those who listened to the novel song ($M = 6.45$, $SD = 2.49$), $t(96) = 5.60$, $p < .001$, $d = .85$. Furthermore, as expected, participants who reflected on their favourite song reported less objective ambivalence ($M = -0.65$, $SD = 2.69$) than did those who

Table 1. Correlations among Study 1 variables.

Variable	1	2	3	4	5	6
1. State nostalgia	–	.51**	.49**	.82**	–.07	–.31**
2. Attitudes		–	.46**	.46**	–.14	–.49**
3. Certainty			–	.57**	–.21*	–.39**
4. Importance				–	–.18	–.36**
5. Subj. ambivalence					–	.45**
6. Obj. ambivalence						–

$N = 98$; * $p < .05$, ** $p < .01$.

listened to the novel song ($M = 1.17$, $SD = 2.63$), $t(96) = 3.38$, $p = .001$, $d = .69$. There was no reliable difference between the nostalgic song ($M = 3.66$, $SD = 2.60$) and novel song condition ($M = 4.03$, $SD = 2.45$) for subjective ambivalence, $t(96) = .72$, $p = .47$.

In sum, Study 1 supported the predictions that nostalgic attitude objects might reveal stronger attitudes. Specifically, a song that elicited feelings of nostalgia (compared to a novel song) were evaluated more positively, were perceived with greater attitudinal certainty, greater importance, and less objective ambivalence. Although observing that one's favourite song might show greater positivity and stronger attitudes is not especially surprising, the correlational findings demonstrated that the degree to which a song evoked nostalgic feelings predicted more positive attitudes and stronger attitudes on three of the four measures.

Study 2

Study 2 replicated Study 1 while addressing potential methodological confounds. Specifically, Study 1 asked participants to reflect on a favourite song in the nostalgia condition. Although the two conditions differed in the nostalgia ascribed to the songs, instructing some participants to reflect on a *favourite* song means that attitudes toward the nostalgia-evoking song would, by definition, be more positive than a novel song. We addressed this issue in Study 2. An additional concern involved the control condition song, which was a novel Korean-language pop song used to ensure that our American student sample was unfamiliar with it. However, because the song was in a foreign language, participants were not able to understand its lyrics, and thus uncertainty about the song might trigger disfluency through not understanding what they are hearing. Because disfluency produces more negative attitudes (e.g. Song & Schwarz, 2008), Study 2 used a novel English-language pop song instead.

An additional goal of Study 2 was to directly investigate whether nostalgia-evoking attitude objects are perceived as being a greater part of one's self-concept. Accordingly, we included a measure of self-defining attitudes, which are attitudes that people believe reflect who they are (Zunick et al., 2017). Self-defining attitudes help clarify people's self-concepts (e.g. "Who am I?") for themselves and others. Zunick and colleagues demonstrated that self-defining attitudes tend to be positive and univalent. Because people typically associate the self with

positivity (e.g. Taylor & Brown, 1988) and because we found evidence in Study 1 that nostalgia was associated with more positive evaluations and less ambivalence, it is possible that attitudes toward nostalgic stimuli are also more self-defining.

Participants

One hundred and eighty-one undergraduate students participated for course credit (19.3% male, 79.6% female, 1.1% other or did not respond; 82% White; $M_{age} = 18.92$, $SD = 1.71$). Twenty-one participants were excluded from analyses due to failing an attention check, resulting in a final sample of 160 participants.

Materials

Self-defining attitudes

Self-defining attitudes were assessed using two items: "My evaluation of the song reflects the kind of person I am or aspire to be", and "My evaluation of the song says something, both to myself and others, about who I am as an individual" (Zunick et al., 2017). Item responses ranged from 1 (strongly disagree) to 7 (strongly agree), and the mean rating ($\alpha = .89$) was computed, with larger values reflecting more self-defining attitudes.

Procedure

Study 2 used a similar methodology as Study 1 with some exceptions. First, instead of being asked to bring to mind a favourite song, participants in the nostalgia condition were presented with the Oxford Dictionary definition of nostalgia and asked to bring to mind a song that made them feel nostalgic (Sedikides et al., 2015). Second, participants in the control condition listened to a novel English-language pop song ("Kiss & Tell" by breakfast.) instead of a Korean-language pop song. Once again, all participants reported having never heard the novel song prior to the study. Next, participants completed measures assessing their attitudes toward the song, the metacognitive measures, and the measure of self-definition. Finally, participants were thanked, debriefed, and dismissed.

Results and discussion

Nostalgia manipulation check

As expected, participants who reflected on a nostalgic song reported it making them feel more nostalgic ($M = 4.16$, $SD = 0.87$) than did participants who listened

to the novel song ($M = 2.43$, $SD = 1.08$), $t(156) = 11.07$, $p < .001$, $d = 1.76$.

Relations among measures

As Table 2 shows, greater state nostalgia was associated with more positive attitudes, greater attitudinal certainty, greater importance, and less objective ambivalence (replicating Study 1). Additionally, more state nostalgia was associated with greater self-definition. Finally, consistent with Study 1, state nostalgia was unrelated subjective ambivalence.

Between condition differences

As expected, participants who reflected on a nostalgic song reported more positive attitudes ($M = 9.59$, $SD = 2.09$) than did participants who listened to the novel song ($M = 6.38$, $SD = 2.29$), $t(156) = 9.17$, $p < .001$, $d = 1.46$.

Turning to predictors of attitude strength, participants who reflected on a nostalgic song perceived the song as more important ($M = 7.68$, $SD = 2.75$) than did those who listened to the novel song ($M = 3.29$, $SD = 2.27$), $t(156) = 10.97$, $p < .001$, $d = 1.47$. Also replicating Study 1, participants who reflected on a nostalgic song reported less objective ambivalence ($M = 0.22$, $SD = 3.25$) than did those who listened to the novel song ($M = 1.58$, $SD = 2.46$), $t(156) = 2.98$, $p < .01$, $d = .47$. There was also a marginally significant difference between conditions for subjective ambivalence, $t(156) = 1.77$, $p = .08$, $d = .28$, such that participants who reflected on a nostalgic song tended to report less subjective ambivalence ($M = 3.11$, $SD = 2.30$) than did those who listened to the novel song ($M = 3.75$, $SD = 2.25$). Unlike Study 1, there was no difference between the nostalgic song ($M = 8.40$, $SD = 2.03$) and novel song ($M = 8.01$, $SD = 1.95$) conditions for attitudinal certainty, $t(156) = 1.23$, $p = .22$. Finally, participants who reflected on a nostalgic song reported that their attitudes toward it were more self-defining ($M = 4.24$, $SD = 1.70$) than did

those who listened to the novel song ($M = 3.01$, $SD = 1.62$), $t(156) = 4.68$, $p < .001$, $d = .74$.

Overall, these findings were mostly consistent with Study 1, supporting the hypotheses that nostalgic (compared to novel) attitude objects are evaluated more positively, are perceived with greater attitudinal importance, and have less objective ambivalence. Study 2 also found that one's evaluation towards nostalgia-evoking attitude objects were perceived as a greater part of one's self-concept.

Study 3

Study 3 replicated the first two studies while addressing another potential confound. In the previous studies, participants in the nostalgia condition self-selected the attitude object they evaluated, whereas participants in the control condition were provided with an attitude object to evaluate. Thus, it could be that the observed effect of nostalgia reflects an artifact in that attitude objects selected by participants in the nostalgia condition were more mentally accessible than the attitude objects for control condition participants, which could produce stronger attitudes for those in the experimental condition without relying on nostalgia (Fazio, 2007). Also, the conditions in these studies differed in how the song was experienced (i.e. one group of participants imagined a song while others heard a song). Thus, in Study 3, participants in both conditions self-selected the attitude object to evaluate and experienced it similarly. Further, Study 3 broadened generalizability by using a different type of attitude object, a television show.

Participants

One hundred and twelve undergraduate students participated for course credit (36.2% male, 63.8% female; 75% White; $M_{\text{age}} = 19.41$, $SD = 1.19$). Seven participants were excluded from analyses due to

Table 2. Correlations among Study 2 variables.

Variable	1	2	3	4	5	6	7
1. State nostalgia	–	.69**	.23*	.71**	–.05	–.23**	.46**
2. Attitudes		–	.20**	.65**	.03	–.29**	.45**
3. Certainty			–	.29**	–.35**	–.34**	.29**
4. Importance				–	–.01	–.24**	.58**
5. Subj. ambivalence					–	.43**	.04
6. Obj. ambivalence						–	–.22**
7. Self-definition							–

$N = 160$; * $p < .05$, ** $p < .01$.

failing an attention check, resulting in a final sample of 105 participants.

Materials

Nostalgia

Using a modified Event Reflection Task (ERT; Sedikides et al., 2015), participants were randomly assigned to nostalgia or control conditions. Participants in the nostalgia condition were shown the Oxford Dictionary definition of nostalgia and asked to think about and reflect on a television show that made them feel nostalgic. Participants in the control condition were asked to select a television show that they had started watching for the first time in the last thirty days, which should not evoke nostalgia because of its recency. Following this task, all participants responded to the measure of state nostalgia, which served as a manipulation check.

Procedure

The procedure for Study 3 was identical to Study 2 with the exception of the modified ERT. After completing the measures, participants were thanked, debriefed, and dismissed.

Results and discussion

Nostalgia manipulation check

As expected, participants who reflected on a nostalgic television show reported it made them feel more nostalgic ($M = 3.95$, $SD = 0.88$) than did participants who reflected on a television show that they recently begun watching ($M = 2.62$, $SD = 1.16$), $t(103) = 6.64$, $p < .001$, $d = 1.29$.

Relations among measures

As Table 3 reports, greater state nostalgia was significantly associated with more positive attitudes, greater

attitudinal certainty, greater importance, less subjective and less objective ambivalence, and greater self-definition. Attitudes and attitude strength predictors were related to one another in ways consistent with past findings (e.g. less ambivalence predicting greater certainty).

Between condition differences

As expected, participants who reflected on a nostalgic television show reported more favourable attitudes toward it ($M = 9.84$, $SD = 1.40$) than did participants who reflected on a more recently watched television show ($M = 8.76$, $SD = 2.15$), $t(103) = 3.09$, $p < .001$, $d = .60$.

Consistent with predictions, participants who reflected on a nostalgic television programme perceived it as more important to them ($M = 6.39$, $SD = 2.55$) than did those who reflected on a newly watched television programme ($M = 5.22$, $SD = 2.70$), $t(103) = 2.28$, $p < .05$, $d = .45$. Also as expected, those who reflected on a nostalgic television show reported less objective ambivalence ($M = -1.37$, $SD = 2.69$) than did those who reflected on a new television show ($M = .07$, $SD = 2.73$), $t(103) = 2.71$, $p < .05$, $d = .53$. There was also an effect of conditions for subjective ambivalence, $t(103) = 3.34$, $p < .001$, $d = .65$, such that participants who reflected on a nostalgic show reported less subjective ambivalence ($M = 2.19$, $SD = 1.39$) than did those who reflected on a show they recently started watching ($M = 3.24$, $SD = 1.84$). Finally, there were no effects of condition for attitudinal certainty, $t(103) = .97$, $p = .34$, or self-definition, $t(103) = 1.14$, $p = .26$.

Study 4

The previous studies found that nostalgic attitude objects, compared to control attitude objects, showed greater attitudinal importance and less objective ambivalence, supporting the assertion that

Table 3. Correlations among Study 3 variables.

Variable	1	2	3	4	5	6	7
1. State nostalgia	–	.52**	.20*	.50**	–.31*	–.36**	.39**
2. Attitudes		–	.47**	.44**	–.38**	–.43**	.36**
3. Certainty			–	.42**	–.45**	–.35**	.31**
4. Importance				–	–.13	–.26**	.42**
5. Subj. ambivalence					–	.36**	.05
6. Obj. ambivalence						–	–.22*
7. Self-definition							–

$N = 105$; * $p < .05$. ** $p < .01$.

nostalgic attitudes should be relatively stronger. However, one of the signature outcomes of stronger attitudes is greater behavioural intentions toward the attitude object (Luttrell & Sawicki, 2020). Thus, Study 4 explored whether nostalgic attitude objects yield greater behavioural intentions than non-nostalgic attitude objects. Study 4 also addressed another confound in that nostalgic attitude objects selected by participants in Studies 1–3 might have some general property beyond their nostalgia that make them different than non-nostalgic attitude objects. Thus in this final study, participants either reflected on a nostalgic song of their choosing or were asked to listen to a song that another participant considered nostalgic. This yoking procedure ensured that control condition attitude objects had the potential to be viewed as capable of being nostalgic (indeed, they were by half of the participants).

Finally, in addition to the base prediction that participants who reflected on a nostalgic song would report stronger behavioural intentions toward it than participants who listened to someone else's nostalgic song that does not evoke nostalgia for them, it was further hypothesised that the effect of nostalgia on behavioural intentions would be mediated by attitudinal importance and objective ambivalence. This prediction was forwarded because Studies 1–3 consistently found that nostalgic attitude objects revealed greater attitudinal importance and less objective ambivalence, whereas between condition differences for other metacognitive characteristics of attitudes were more variable. Relatedly, greater attitudinal importance and lower objective ambivalence have been found to be more predictive of behavioural intentions (Armitage & Conner, 2004; Krosnick, 1988; Visser et al., 2003). Because Studies 1–3 demonstrated nostalgic attitude objects were appraised as more important and lower in objective ambivalence, these metacognitions seem likely candidates to guide behaviour motivations toward nostalgic stimuli.

Participants

One hundred and eighty-eight undergraduate students participated for course credit (14.6% male, 85.4% female; 91% White; $M_{\text{age}} = 18.62$, $SD = 1.57$). Three participants were excluded from analyses due to failing an attention check, resulting in a final sample of 185 participants.

Procedure

We first collected data for participants in the nostalgia condition. As in Study 2, these participants were provided with the Oxford Dictionary definition of nostalgia and then were asked to bring to a mind a song that makes them feel nostalgic. Following this task, nostalgia condition participants responded to measures assessing their attitudes toward the song, the metacognitive variables, and their behavioural intentions. Once data were collected for the nostalgia condition participants, we began data collection for participants in the control condition, which was necessary because control condition participants were yoked to a participant in the nostalgia condition (i.e. they listened to a song that a nostalgia condition participant considered nostalgic). After listening to the song, control condition participants completed the same measures as nostalgia condition participants (i.e. attitude, metacognitive, and behavioural intentions). Finally, all participants were thanked, debriefed, and dismissed.

Materials

Behavioural intentions

The new measure in Study 4 was a five-item instrument assessing participants' likelihood of engaging in behaviours related to the song they reflected on or listened to. Response options ranged from 1 (not at all likely) to 7 (very likely) to items such as "How willing would you be to recommend this song to people you're close with?" and "If this song came on while you were listening to music, how likely would you be to skip to a new song?" (the latter item was reverse scored). Mean ratings were computed, with larger scores representing stronger positive behavioural intentions toward the song ($\alpha = .87$).

Results and discussion

Nostalgia manipulation check

As expected, participants in the nostalgic song condition reported greater nostalgia ($M = 4.28$, $SD = 0.64$) than did participants who listened to that same song ($M = 3.52$, $SD = 1.06$), $t(183) = 5.81$, $p < .001$, $d = 1.18$.

Relations among measures

As Table 4 shows, greater state nostalgia was associated with more positive attitudes toward the song,

Table 4. Correlations among Study 4 variables.

Variable	1	2	3	4	5	6	7	8
1. State nostalgia	–	.59**	.35*	.55**	–.20*	–.20*	.43**	.61**
2. Attitudes		–	.49**	.43**	–.22*	–.40**	.36**	.62**
3. Certainty			–	.50**	–.47**	–.56**	.47**	.40**
4. Importance				–	–.13	–.34**	.55**	.62**
5. Subj. ambivalence					–	.60**	–.19*	–.22*
6. Obj. ambivalence						–	–.35**	–.44**
7. Self-definition							–	.46**
8. Behavioural Intent.								

$N = 185$; * $p < .05$. ** $p < .01$.

greater attitudinal certainty, greater attitude importance, less subjective and less objective attitude ambivalence, greater self-definition, and (the key addition to Study 4) stronger behavioural intentions. Attitudes and metacognitive variables were related to one another in ways consistent with past research (i.e. 20 of the 21 possible correlations were significant and in the expected direction).

Between condition differences

As expected, participants who reflected on a nostalgic song reported more favourable attitudes ($M = 9.69$, $SD = 1.62$) than did participants who listened to the same song ($M = 8.77$, $SD = 2.17$), $t(183) = 3.24$, $p < .05$, $d = .48$, consistent with predictions that nostalgic attitude objects are evaluated more positively.

Consistent with the previous studies, participants who reflected on their own nostalgic song reported that it was more important to them ($M = 7.34$, $SD = 2.77$) than did those in the control condition who listened to it ($M = 4.69$, $SD = 2.78$), $t(183) = 6.50$, $p < .001$, $d = .96$. However, unlike the previous studies, there were no significant differences between conditions for objective ambivalence, $t(183) = .55$, $p = .58$, for subjective ambivalence, $t(183) = .14$, $p = .88$, for attitudinal certainty, $t(183) = .34$, $p = .73$, or for self-definition, $t(183) = 1.90$, $p = .06$. Finally, participants who reflected on a song that made them feel nostalgic reported more positive behavioural intentions toward that song ($M = 5.58$, $SD = 1.13$) than did control condition participants who listened to that same song ($M = 4.29$, $SD = 1.65$), $t(183) = 6.15$, $p < .001$, $d = .91$.

Mediational analyses

SPSS macro PROCESS Model 4 with 5,000 bootstrapped samples was used to test the hypothesised indirect effect of nostalgia on behavioural intentions. As depicted in Figure 1, state nostalgia served as the predictor, behavioural intention served as the

outcome, and attitudinal importance and objective ambivalence were entered as parallel mediators. A significant indirect effect was found such that importance mediated the effect of state nostalgia on behavioural intentions (indirect effect = .29, $SE = .07$, 95% CI [.17, .43]). Similarly, a significant indirect effect was found such that objective ambivalence mediated the effect of state nostalgia on behavioural intentions (indirect effect = .08, $SE = .04$, 95% CI [.02, .16]). These findings demonstrate that feeling nostalgic results in greater intention to engage with nostalgia-evoking objects, and that perceived importance and less objective ambivalence can statistically account for the effect.

General discussion

Past research has identified metacognitive variables that predict an attitude's strength (Krosnick & Petty, 1995; Luttrell & Sawicki, 2020; Visser et al., 2006). However, little research has investigated how discrete emotions affect evaluations, the metacognitions associated with those evaluations, and those evaluations' underlying strength. In the current work, we explored how feeling nostalgia affects these outcomes.

Across four studies, we observed evidence that nostalgic attitude objects (compared to control objects) were viewed more positively (Studies 1–4), yield greater attitudinal importance (Studies 1–4) and less objective ambivalence (Studies 1–3) compared to objects that do not elicit nostalgia. Conversely, we observed less consistent evidence that nostalgic attitude objects yield greater attitudinal certainty and self-definition, as well as less subjective ambivalence. Study 4 provided evidence that nostalgic attitude objects revealed stronger behavioural intentions, a hallmark of strong attitudes. Moreover, it also demonstrated that nostalgia's effect on behavioural intentions was mediated by attitudinal

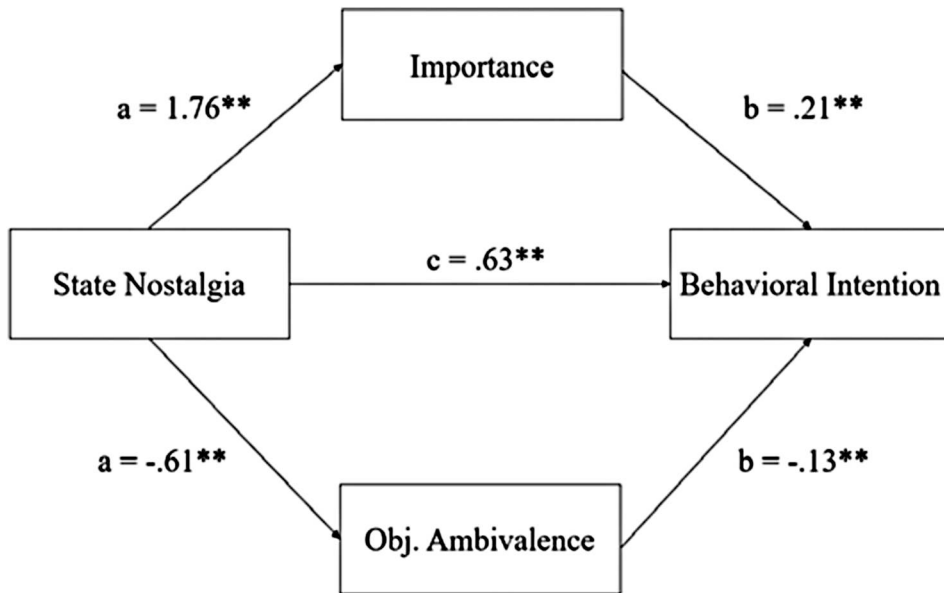


Figure 1. Mediation model of the indirect effects of nostalgia on behavioural intentions via attitudinal importance and objective ambivalence in Study 4

importance and objective ambivalence, suggesting that nostalgia may strengthen people's behavioural intentions because the attitude object is valued more and evokes fewer mixed feelings, respectively. To our knowledge, the current study is the first to explore how nostalgia relates to attitudes, their meta-cognitive characteristics, and how those characteristics underlie evaluation strength.

Why does nostalgia lead people to appraise attitude objects more positively? Because nostalgia is a bittersweet emotion (van Tilburg et al., 2019; Wildschut et al., 2006), one might anticipate that nostalgic attitude objects would be associated with both positive and negative reactions (i.e. ambivalence) compared to non-nostalgic attitude objects, but the current work shows the opposite is true. One explanation for this outcome could be perceived familiarity leads to more positive evaluations (Schwarz, 2005; Winkielman et al., 2003). Because nostalgia is experienced when recalling previous, meaningful life experiences, familiarity could drive the observed attitude valence findings. However, familiarity alone cannot explain all observed effects, especially those involving attitudinal importance or objective ambivalence.

Instead, we forward that the observed effects involving importance and ambivalence may stem from nostalgia being a self-conscious emotion (Sedikides et al., 2015). In nostalgic experiences, the self

serves a prominent role (Wildschut et al., 2006), and thus nostalgia-evoking attitude objects are likely to be self-relevant (Kaplan, 1987; Vess et al., 2012) and reflect the self-oriented function that nostalgia serves (Sedikides et al., 2015). Further, because nostalgia-evoking objects are appraised positively and are associated with the self, they have less ambivalence because of their greater positivity.

Regarding attitudinal importance, an explanation for our findings could be the existential function that nostalgia serves (Sedikides et al., 2004). Nostalgia has been shown to increase meaning in life (Routledge et al., 2011; Sedikides & Wildschut, 2018), in part because nostalgic events typically pertain to momentous life events that have personal, symbolic value (Sedikides et al., 2004), which should result in associated attitude objects being perceived as very important. Indeed, the mediational analysis in Study 4 was consistent with this interpretation, indicating that people may engage with nostalgia-evoking objects in part because they are personally important.

Finally, one might wonder why we observed more reliable between-condition differences on objective ambivalence than on subjective ambivalence. Indeed, because nostalgia is a bittersweet emotion (van Tilburg et al., 2019; Wildschut et al., 2006), one might expect that nostalgic attitude objects would be associated with considerable ambivalence.

However, our findings for objective ambivalence are consistent with past research that people typically report relative positivity following nostalgia manipulations as they reflect on positive, meaningful life episodes (Stephan et al., 2012). Thus, consistent with nostalgia's self-oriented function (Sedikides et al., 2015), nostalgic attitude objects in the current work were perceived as being positive in nature, and thus, relatively low in objective ambivalence. Turning to the less consistent findings involving subjective ambivalence, it is possible that encountering control stimuli (i.e. unknown songs) evoked mixed feelings because of their novelty, producing comparable levels of subjective ambivalence between conditions. Importantly, in Study 3 where participants selected their own television shows in both conditions (thus eliminating the potential for mixed feelings resulting from novel stimuli), the predicted differences between conditions on subjective ambivalence were observed. Admittedly, this account is speculative, and future work should explore how novel stimuli might trigger unanticipated subjective ambivalence. However, for the current purposes, the most important finding across all four studies is observing multiple indicators of stronger attitudes (e.g. greater importance, less objective ambivalence) for nostalgic attitude objects, especially considering the well-established variability in attitude strength indicators (Krosnick et al., 1993).

Another limitation of the current work involved its study designs. In this work, we adapted past manipulations involving media-related stimuli (e.g. Routledge et al., 2011; Sedikides et al., 2015), and each study had potential confounds that were addressed in subsequent studies. Having some conditions involving novel stimuli (while others had self-selected stimuli) or having some conditions where people recalled stimuli while others experienced stimuli is not ideal, although Study 3 addressed both potential confounds. Our approach in the current work was to use converging methods to eliminate confounds and increase generalizability, but future work should attempt to limit such confounds as much as possible.

These findings demonstrate that discrete emotions influence attitudes and their strength. Recent research has shown that attitudes predicated on greater emotionality are more predictive of behavioural intentions (Rocklage & Fazio, 2016, 2018) and are more stable over time (Rocklage & Luttrell, 2021), and the current work shows that a specific emotion, nostalgia,

affects attitudes and attitude strength. These findings extend past work by taking a discrete, functionalist account of emotion to demonstrate how unique emotional experiences influence attitudes and their strength through cognitive appraisals (Ekman, 1992; Frijda, 1988, 1993; Keltner & Lerner, 2010; Lazarus, 1991; Smith & Ellsworth, 1985). By taking into consideration the appraisal profile of nostalgia (van Tilburg et al., 2019) and the affect-as-information hypothesis (Schwarz & Clore, 1983), we anticipated that experiencing nostalgia influences the metacognitive characteristics of attitudes toward nostalgic stimuli, and the current mediational findings show how those metacognitions translated to attitude strength (in this case, behavioural intentions). Thus, the current work shows that discrete, higher-order emotions impact attitude strength beyond general emotionality, and future work should consider how other emotions might affect metacognitions and attitude strength.

For example, feelings of pride might produce stronger attitudes similar to the current findings because pride-eliciting attitude objects (e.g. one's university) will be important, lower in ambivalence, and bolster meaningful, positive aspects of one's self-concept because pride is rooted in appraisals of status and success (Tracy & Robins, 2004, 2007). It is also possible that negative self-conscious emotions such as guilt, shame, or embarrassment could impact attitude strength due to their being moral emotions that signal to the actor whether they are transgressing a personal moral value (Haidt, 2003; Tracy & Robins, 2004). Because having a perceived moral basis for one's attitude predicts attitude strength (e.g. Luttrell et al., 2016; Luttrell & Togans, 2021), it is reasonable that attitudes predicated on guilt, shame, or embarrassment might yield similar results as the current research.

Conclusion

In sum, the current findings demonstrate that nostalgia shapes the metacognitive characteristics of attitudes toward nostalgic attitude objects, specifically attitudinal importance and objective ambivalence, as well as how those characteristics relate to the attitude's strength. More broadly, these findings contribute to a growing programme of research exploring how affect influences attitudes by highlighting the consequences of discrete emotions. Thus, this work emphasizes the value in taking a discrete,

functionalist account of emotions to better understand how affect influences attitude strength.

Note

1. For all studies discussed, post-hoc power analyses were conducted using G*Power (Faul et al., 2007), with the exception of Study 4, which employed a Monte Carlo simulation (Schoemann et al., 2017). The analyses were based on the smallest effect size observed for significant differences between conditions ($d = .45$ to $.69$). The results revealed Study 1 power at 94.24%, Study 2 power at 87.83%, Study 3 power at 72.27%, and Study 4 power at 90.69%.

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