

The Role of Event Distinctiveness in the Emotional Experience of Nostalgia

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Major: Social psychology, Social Psychology Department

Completed in June 2020

Abstract

Researchers describe nostalgia as a bittersweet emotion. Recently, research inducing nostalgic feelings has found predominantly positive effects of the construct on several well-being outcomes. When measured during everyday life, however, the consequences of nostalgia were more negative. This could have resulted from the fact that events during everyday life that evoke nostalgia are more ordinary. In the current study, we aimed to examine this discrepancy by manipulating nostalgia in two different ways. The first experimental condition consisted of the classic Event Reflection Task (ERT) in which participants are asked to reflect on their most nostalgic past event (special nostalgia condition). The second experimental condition is a variant of the ERT in which participants are asked about an ordinary nostalgic event in their recent past (ordinary nostalgia condition). The sample consisted of 214 participants ($M_{age} = 26.38$, $SD = 8.15$) who were randomly assigned to one of two experimental conditions or the control condition. The dependent variable was affect and depressive symptoms and satisfaction with life were added as moderators. We tested the assumption that the special nostalgic condition would result in more positive and less negative affect compared to the ordinary nostalgic condition. No significant differences were found. Additionally, we tested whether people high on depressive symptoms and low on satisfaction with life had more negative and less positive affect. Results showed that people high in depressive symptoms did show more negative affect and satisfaction with life was a positive predictor of positive affect.

Keywords: nostalgia, event distinctiveness, Event Reflection Task, affect, depressive symptoms, satisfaction with life

The Role of Event Intensity in the Emotional Experience of Nostalgia

Nostalgia is defined as “a self-conscious, bittersweet but predominantly positive and fundamentally social emotion” (Sedikides, Wildschut, Routledge, Arndt, Hepper, & Zhou, 2015). It can enhance positivity towards oneself and one’s future, increase the perception of life as meaningful, and facilitate several social functions such as social connectedness (Sedikides et al., 2015). A similar view on nostalgia can be found in Homer’s ancient Greek poem the *Odyssey*. In his story, nostalgia is defined as a resource that can aid people in overcoming obstacles and help them find their way home to their families. Hepper, Ritchie, Sedikides, & Wildschut, (2012) investigated whether this definition of nostalgia is similar to those held by laypeople. They found that this is indeed the case, laypeople tend to see nostalgia as a positive emotion that is focused on the past as well as on social connections. Additionally, it was found that this conception of nostalgia can also be generalized to different countries such as Chile, Japan, and Germany (Hepper, Wildschut, et al., 2014). In short, nostalgia is a bittersweet emotion with an emphasis on the sweet and positive, and this emotion is felt universally (Sedikides et al., 2015).

Nostalgia’s first appearance in the scientific literature occurred in the year 1688, in the medical dissertation of Hofer (Hofer, 1934). Nostalgia, derived from the Greek *Nostalglas*, was the term he attributed to “wanting to return to the native land” (*Nosos*) and the feelings of suffering and grief (*Algos*) (p. 381). In this view nostalgia was a disease characterized by sadness, heart palpitations, “*stupidity of the mind*”, and diminished hunger amongst others. The view of nostalgia as a physical illness persisted throughout the eighteenth and nineteenth centuries. During the twentieth century research began to discredit the old view by showing that no physical maladies were found in patients diagnosed with nostalgia (Rutledge, 1977).

Additionally, the search for a location of nostalgia in the body proved futile (Boym, 2001). In the face of mounting evidence that nostalgia could not be a physical illness, researchers began viewing it as a mental disorder instead. Several symptoms included pessimism, sadness, and insomnia. Nostalgia was also viewed as a type of depression. More recent research at the advent of the twenty-first century focused more on the potential benefits of nostalgia (e.g., Sedikides, Wildschut, Arndt, & Routledge, 2008). The majority of research on nostalgia performed since the beginning of the twenty-first century portrays nostalgia as a positive but bittersweet emotion with numerous beneficial consequences in the motivational and behavioral realms showing a return to the term as perceived by Homer (for a review, see Sedikides et al., 2015). To sum up, the valence profile of nostalgia has gone through substantial changes throughout time with views going from mostly positive to overtly negative. The current dominant view focuses on the positive outcomes of the construct.

Irrespective of its valence, nostalgia can be induced in several ways. Nostalgia researchers that are interested in the effects nostalgia has on other psychological constructs usually evoke nostalgia by having participants listen to music, read song lyrics, or by smelling candles with distinct scents. Additionally, researchers can choose to measure trait nostalgia using Batcho's Nostalgia Inventory (1995) for example. More commonly, nostalgia is experimentally induced with the use of the Event Reflection Task (ERT) originally developed by Wildschut et al. (2006). During this task, participants are asked to bring to mind and actively remember a nostalgic experience or an ordinary experience from their past. Prior to this, a definition of nostalgia is provided. Subsequently they have to provide keywords related to the experience or write a short essay. After completing the ERT participants typically fill out questionnaires to

measure the effect of nostalgia on different outcome variables such as affect, motivation, or perception of life as meaningful.

Numerous studies have shown that people report more positive affect in the moment after describing a nostalgic event compared to control conditions (e.g., Hepper et al., 2012; Stephan et al., 2012). In addition, a study by Routledge et al. (2011) found that trait nostalgia is positively related to meaning in life, which is theorized to be one of five elements of well-being (Seligman 2011). Furthermore, studies using nostalgic music and scents have found that nostalgia raises state self-esteem (e.g. Cheung et al., 2013; Reid et al., 2014). Nostalgia also has positive effects in the social realm, it fosters social connectedness constructs such as feeling loved and protected (Reid et al., 2014; Wildschut et al., 2006), feeling socially supported (Zhou et al., 2008) and being empathetic (Zhou, Wildschut, Sedikides, Shi, et al., 2012). It has even been shown to enhance prosocial tendencies such as helping behavior (Stephan et al., 2014). Lastly, a study by Cheung et al. (2013) found that nostalgia increases optimism and the number of positive expectations about the future. To sum up, nostalgia has been found to have positive effects on self-related constructs and social constructs which is in line with the current positive view on nostalgia.

In line with research on the positive effects of nostalgia, a study by Newman, Sachs, Stone, and Schwarz (2020) on nostalgia and well-being in daily life suggests that it is indeed the case that when nostalgia is experimentally induced, it tends to have positive effects on self-esteem (e.g. Cheung et al., 2013; Reid et al., 2014), positive affect (e.g., Hepper et al., 2012; Stephan et al., 2012), and other related constructs such as meaning in life and self-esteem. However, they suggest this might be partially due to the way in which nostalgia is typically experimentally manipulated. In the same study, Newman et al. (2020) measured nostalgia in

daily life, this type of nostalgia seemed to have mixed effects on well-being and even a negative effect on well-being when measured on the subsequent day. They proposed that asking participants about their most nostalgic event which is done in the Event Reflection Task would lead to more extreme memories that hold more meaning and are thus remembered more easily. These types of past events lose their negative affect faster than they lose their positive affect (Ritchie et al., 2006; Walker et al., 1997) resulting in increased positive affective scores and decrease negative affective scores. Another study by Newman, Schwarz, and Stone (2020) gives a possible explanation for these findings. They found that when participants were asked to report on their well-being by looking at a large part of their life (global evaluation) or by reporting well-being during their daily lives, the well-being scores were more positive and less negative for the global evaluation compared to the repeated assessments made during daily life. This suggests the most common way to induce nostalgia, the ERT, which asks participants to think of the event in their past that made them feel most nostalgic might elicited more positive memories while suppressing negative or even traumatic events resulting in more positive outcome variables. Thus, nostalgia seems to be mainly positive when induced experimentally and shows a negative trend when experienced in everyday life.

In the current study, we want to investigate whether this same pattern can be found if nostalgia is experimentally induced in two different ways. By manipulating nostalgic distinctiveness in isolation, we want to limit the amount of alternative explanations for the results found in Newman et al. (2020). We suggest that the difference in affect between experimentally induced nostalgia and everyday nostalgia found by Newman et al. (2020) could be partially due to the distinctiveness of the experience. Additionally, we believe that other recent research that manipulated the nostalgia using the ERT found such positive outcomes partially because the

ERT ask participants to remember their most nostalgic event, thus a distinctive event. To test these assumptions, we will induce nostalgia using the Event Reflection Task (ERT) in two different ways. The Event Reflection Task materials were copied from Sedikides et al. (2015; initially created by Wildschut et al., 2006). As stated, this task asks participants to think of an event that made them feel most nostalgic, thus, a distinctive event. The second experimental condition will consist of a similar ERT. The difference will be that in this task we will ask participants about an ordinary nostalgic event, thus, less distinctive. In this way, it is possible to assess whether the positive effects are due to nostalgia or simply due to event distinctiveness. After participants have completed their essays, we will measure affect. Affect refers to the experience of mood, emotions, or feelings (Hogg, Abrams, Martin (2010) and it can either be negative or positive. Examples of positive affective adjectives include happy, relaxed, and peaceful while negative affective adjectives include stressed, disappointed, and nervous. We hypothesize that special nostalgic events will result in more positive and less negative affect than ordinary nostalgic events. Our second hypothesis is that special nostalgic events will be more positive and less negative than ordinary non-nostalgic events and there will be no (or a slight) difference between ordinary nostalgic and ordinary non-nostalgic events.

Previous research has also focused on outcome variables such as depression and satisfaction with life (Newman et al., 2020) hypothesizing that nostalgia affects these variables. However, we hypothesize that it could be the other way around. Depressive symptoms and satisfaction with life could moderate the effects of nostalgia on affective outcomes. Thus, we are interested to see whether the positive effects of nostalgia are similar for people with high depressive symptoms and people with low life satisfaction, as measured before experimental manipulation. To be more precise we hypothesize that people with low life satisfaction and high

depressive symptoms will generate more negative and less positive events resulting in more negative and less positive affect. Since repetitive negative thinking is related to depression (Spinhoven, van Hemert, & Penninx, 2018) we believe that when asked to think of an ordinary nostalgic event, these people will lean towards the negative and this will result in higher negative affective scores. When asked to think of the event that makes them feel most nostalgic, even people high in depression will remember more distinctive, global, and thus less negative events, resulting in no difference in affective scores compared to people low on depressive symptoms. These predictions were tested in the following study.

Method

Participants

A total of $N = 214$ ($n = 108$ female) participants were recruited through Prolific Academic (www.prolific.co). The mean age of the sample was 26.38 ($SD = 8.15$). Participants below the age of 16 were excluded, as were participants with health or mental complaints. Participation was voluntary and the study lasted around 10 minutes. Participants were rewarded with 0.90£ for their participation. Participants were randomly assigned to one of three conditions, the control condition, the ordinary nostalgia condition, and the special nostalgia condition. Table 1.0 shows the sample descriptives per condition.

Power analysis. The sample needed to show an effect of $d = 0.60$ (the average of the most relevant effect sizes of Newman et al., 2020) with a power of $(1 - \beta) = .97$ in one-tailed t -tests is $n = 70$ participants per condition or $N = 210$ participants in total. We chose a power of .97 because we compute eight planned comparisons and with a power of .97 there is a chance of $.97^8 = .80$ that all tests will be significant.

Table 1.0

Sample Descriptives

Condition	<i>n</i>	<i>M</i> _{Age}	<i>SD</i> _{Age}	% Female
Control Condition	49	26.39	9.24	51
Ordinary Nostalgia Condition	86	26.48	8.15	57
Special Nostalgia Condition	79	26.28	7.51	43
Total	214	26.38	8.15	50.5

Measures

Manipulated variables. We used adapted versions of the Event Reflection Task (ERT; Sedikides et al., 2014) to induce nostalgia in the experimental conditions. The ERT used by Sedikides et al., (2014) induces nostalgia by asking participants to think about a past event that makes them feel most nostalgic (see Appendix A). In our study, this is the special nostalgia condition because it specifically states that participants should think of an event that makes them feel most nostalgic in comparison to a more ordinary nostalgic event that might occur more frequently but is less intense. The ordinary type of nostalgia is induced by an adaption of the ERT task in which participants are asked to think of an ordinary nostalgic event, specifically one that made them feel nostalgic recently (see Appendix B). The control condition was asked to think of an ordinary non-nostalgic event in their past, this was done by asking participants about an ordinary event (see Appendix C). All three conditions were subsequently asked to write an essay about these events.

Measured variables. All measures of the current study were adapted from previous research by Newman et al. (2020). Affect was measured following the circumplex model (Feldman Barrett & Russel, 1998; Brandstätter, 2007; Nezlek, 2005). This model differentiates

between arousal (activated and deactivated) and valence (positive and negative) resulting in four types of affect, positive activated affect (PA), positive deactivated affect (PD), negative activated affect (NA), and negative deactivated affect (ND). The items were taken from a list of adjectives used reliably by Brandstätter (2007) and Nezlek (2005) in diary research. Positive activated affect was measured using the words enthusiastic, delighted, happy, glad, and excited; positive deactivated affect with the words calm, peaceful, relaxed, contented, and at ease; negative activated affect with stressed, angry, annoyed, tense, and nervous; negative deactivated affect with depressed, disappointed, miserable, gloomy, and sad. A 7-point Likert scale was used ranging from 1 = *do not feel this way at all*, 4 = *feel this way moderately*, to 7 = *feel this way very strongly*. In the current study, the Cronbach alpha coefficients were .909 for PA, .901 for PD, .911 for NA, and .909 for ND.

Depressive symptoms were assessed using the Center for Epidemiologic Studies Depression Scale (Radloff, 1977). The scale asks participants to remember how often they felt a particular way during the past week. Responses to 20 items were recorded on a 4-point Likert scale (0 = *rarely or none of the time [less than 1 day]* . . . , 3 = *most or all of the time [5-7 days]*). Example items include “I felt hopeful about the future” and “I felt that I could not shake off the blues even with help from my family and friends”. Items were reverse coded where necessary. In the current study, the Cronbach alpha was found to be .782.

Satisfaction with life (SWL) was measured using five-item Satisfaction with Life Scale (Diener, Emmons, Larsen, & Griffin, 1985). Responses were assessed on a 7-point Likert scale (1 = *strongly disagree*, 7 = *strongly agree*). The Satisfaction with Life scale had a Cronbach alpha coefficient of .888 in the current study.

Procedure

The study was conducted online and hosted on Qualtrics (www.qualtrics.com). After providing informed consent, participants first completed the Center for Epidemiologic Studies Depression Scale (CES-D scale) by Radloff (1977) and the Satisfaction with Life Scale (Diener, Emmons, Larsen, & Griffin, 1985). Afterward, participants were assigned to one of the three conditions and asked to write a short essay about an ordinary event, an ordinary or ‘everyday’ nostalgic event, or a special nostalgic event. Participants had to write an essay that was between 50 and 300 words long. To ensure that participants did not skip the manipulation, they had to work on this essay for a minimum of 3 minutes. After writing this essay, the manipulation check was administered and the dependent variable was measured using the circumplex measure of affect (Feldman Barrett & Russel, 1998; Brandstätter, 2007; Nezlek, 2005). Finally, participants provided basic demographic data, were thanked, and received their compensation.

Statistical Analysis

The experiment had a one-factorial between-subjects design with three cells. The independent variable was nostalgia and the dependent variable was affect. We used depressive symptoms and satisfaction with life as moderators.

Result

Manipulation Check

To test the assumption that the special nostalgic manipulation results in more intense feelings of nostalgia than the ordinary nostalgic manipulation, and that the latter results in more intense feelings of nostalgia than the control condition an analysis of variance was performed. The manipulation check consisted of 5 items (e.g., “right now, I am feeling quite nostalgic). These items were rated on a six-point Likert scale (1 = *strongly disagree*, 6 = *strongly agree*). The Cronbach alpha coefficient was .930. A statistically significant main effect was found, F

(2,21) = 4.18, $p = .017$; however, the effect size was small (partial eta squared = .04). Post-hoc comparisons using the Tukey HSD test indicated that the mean score for the control group ($M = 20.04$, $SD = 6.38$) was significantly different from the special nostalgia condition ($M = 22.90$, $SD = 5.55$) $p = .012$. No significant difference was found between the ordinary nostalgia condition ($M = 22.06$, $SD = 4.88$) $p = .587$ and the special nostalgia condition and between the ordinary nostalgic condition and the control condition $p = .101$.

Descriptive Statistics

To examine whether nostalgia is related to affect in the same way that it has been reported in previous research we inspected the Pearson's correlation between the measured variables and nostalgia. The correlations and descriptive statistics of the variables can be found in table 2.0. Positive correlations were found between nostalgia and positive activated affect ($p < .01$) and positive deactivated affect ($p < .05$). A negative correlation was found between nostalgia and negative activated affect ($p < .05$). Nostalgia was not significantly related to the other measured variables.

Table 2.0

Descriptive Statistics and Correlations between Nostalgia and Measured Variables

Variable	<i>N</i>	Mean	<i>SD</i>	<i>r</i>
Nostalgia ^a	214	21.91	5.55	
Affect				
PA	214	19.12	7.03	.23**
PD	214	22.26	7.01	.17*
NA	214	11.45	6.92	-.14*
ND	214	11.41	7.35	-.02
Depressive symptoms	214	53.86	11.06	.11
Satisfaction with Life	214	19.23	6.89	.13

* $p < .05$. ** $p < .01$

^a = manipulation check used as a measure of nostalgia

Additionally, we examined the correlations between the measured variables to confirm that these were in line with theoretical notions (see table 3.0). All correlations were statistically significant ($p < .01$). PA was positively related to PD, and satisfaction with life, and negatively related to NA, ND, and depression. PD positively related to satisfaction with life, and negatively related to NA, ND, and depression. NA was positively related to ND and depression and negatively related to satisfaction with life. Lastly, depression was negatively related to satisfaction with life. These relations are in line with theoretical expectations and together with the high reliabilities of the measurement instruments suggest that the central variables of interest were assessed as intended.

Table 3.0

Correlations between Measured Variables

	PA	PD	NA	ND	Depression	SWL
PA	-					
PD	.59**	-				
NA	-.32**	-.47**	-			
ND	-.38**	-.41**	.75**	-		
Depression	-.31**	-.37**	.43**	.54**	-	
SWL	.41**	.42**	-.28**	-.36**	-.53**	-

** $p < .01$

Hypothesis Tests

Hypothesis 1. Hypothesis 1 was that special nostalgic events will be more positive and less negative than ordinary nostalgic events. To test this the data were analyzed using four one-sided independent-samples t-tests in order to compare the positive and negative affect scores for the ordinary nostalgic and the special nostalgic condition. Both positive and negative affect contained the sub-categories activated and deactivated affect. We found no significant

differences between the special and ordinary nostalgic conditions on the four affect measures (see table 4.0). This means that hypothesis 1 can be rejected.

Table 4.0

Independent-samples t-tests ordinary nostalgic condition and special nostalgic events condition

Affect	Ordinary		Special		$t(163)$	p	Cohen's d	95% CI of the difference
	M	SD	M	SD				
PA	18.92	6.73	19.52	7.64	-.54	.296	-.09	[-2.81 , 1.61]
PD	21.72	7.35	22.23	6.89	-.46	.324	-.07	[-2.70 , 1.69]
NA	10.58	6.23	11.34	6.79	-.75	.772	-.11	[-2.77 , 1.25]
ND	10.77	6.16	11.60	7.57	-.77	.778	-.11	[-2.96 , 1.31]

Hypothesis 2. Hypothesis 2 was that special nostalgic events would be more positive and less negative than ordinary non-nostalgic events and there will be no (or a slight) difference between ordinary nostalgic and ordinary non-nostalgic events. To test whether there was a difference in affect between the control condition and the special nostalgic condition, four one-sided independent-samples t-tests were conducted. We found no significant differences between the control condition and the special nostalgic condition on the four affect measures (see table 5.0). This means that the first part of hypothesis 2 can be rejected.

Table 5.0

Independent-samples t-tests control condition and special nostalgic events condition

Affect	Control		Special		$t(126)$	p	Cohen's d	95% CI of the difference
	M	SD	M	SD				
PA	18.84	6.61	19.52	7.64	-.52	.304	-.10	[-3.30 , 1.93]
PD	23.27	6.61	22.23	6.89	.84	.799	.15	[-1.40 , 3.48]
NA	13.16	8.04	11.34	6.79	1.37	.086	.26	[-.80 , 4.45]
ND	12.22	8.81	11.60	7.57	.43	.334	.09	[-2.27 , 3.53]

An additional four two-sided independent-samples *t*-tests were performed to compare the mean affect scores between the control group and the ordinary nostalgic events condition. We found no significant differences between the control condition and the ordinary nostalgic condition on the four affect measures (see table 5.0). This means that the second part of hypothesis 2 has been supported.

Table 6.0

Independent-samples t-tests control condition and ordinary nostalgic events condition

Affect	Control		Ordinary		<i>t</i> (133)	<i>p</i>	Cohen's <i>d</i>	95% CI of the difference
	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>				
PA	18.84	6.61	18.92	6.73	-.07	.946	-.01	[-2.45 , 2.29]
PD	23.27	6.61	21.72	7.35	1.22	.226	.22	[-.97 , 4.06]
NA	13.16	8.04	10.58	6.23	1.94	.056	.37	[-.06 , 5.23]
ND	12.22	8.81	10.77	6.17	1.02	.309	.20	[-1.38 , 4.29]

Hypothesis 3. The third hypothesis was that people with low life satisfaction and high depressive symptoms would generate less positive and more negative events resulting in less positive and more negative affect in the ordinary nostalgic condition and the ordinary non-nostalgic condition (control) and that there would be no difference in the special nostalgic condition due to the distinctiveness and global aspects of these types of nostalgic events. To test whether depressive symptoms and satisfaction with life can reliably predict positive and negative affect scores, multiple regression was used with centered and scaled scores. Depressive symptoms, satisfaction with life, condition (0 = special nostalgia, 1 = ordinary nostalgia and, ordinary non-nostalgia), and interactions between condition and the two measured variables were regressed on the four types of affect (see table 7.0). For positive activated affect, the regression explained a significant proportion of variance, $F(2, 208) = 9.73$, $p = .001$, $R^2 = .19$. Additionally,

satisfaction with life was a significant positive predictor of PA ($p = .001$). For positive deactivated affect, the regression explained a significant proportion of variance $F(2, 208) = 11.05, p = .001, R^2 = .21$. In addition, depressive symptoms had a significant negative effect on PD ($p = .003$), and satisfaction with life had a significant positive effect on PD ($p = .001$). This means that the first part of hypothesis 3 was partially supported, people low in life satisfaction showed lower positive activated and positive deactivated affect while people with high depressive symptoms only showed lower positive deactivated affect.

For negative activated affect, the regression explained a significant proportion of variance $F(2, 208) = 10.44, p = .001, R^2 = .20$. Only depressive symptoms were a significant positive predictor, however ($p = .001$). For negative deactivated affect, the regression explained a significant proportion of variance $F(2, 208) = 17.81, p = .001, R^2 = .30$. Additionally, depressive symptoms were a significant positive predictor of ND ($p = .001$). This means that the second part of the third hypothesis was partially supported, people high in depressive symptoms showed more negative affect. Low life satisfaction did not result in more negative affect.

Table 7.0

Moderator Analysis: Depressive Symptoms and Satisfaction with Life (SWL)

Dependent Variable	Effect	<i>B</i>	<i>SE</i>	95% CI	<i>P</i>
PA	Intercept	19.14	.46	[18.24 , 20.04]	.001
	Depressive symptoms	-.86	.54	[-1.93 , 0.20]	.110
	SWL	2.53	.54	[1.47 , 3.58]	.001
	Condition	.38	.91	[-1.41 , 2.18]	.657
	Condition x Depressive symptoms	.37	1.08	[-1.75 , 2.49]	.732
	Condition x Satisfaction with life	1.17	1.07	[-.94 , 3.29]	.275
PD	Intercept	22.26	.45	[21.38 , 23.15]	.001
	Depressive symptoms	-.16	.53	[-2.64 , -.56]	.003
	SWL	2.02	.53	[1.00 , 3.06]	.001
	Condition	-.19	.90	[-1.96 , 1.57]	.829
	Condition x Depressive symptoms	-.70	1.06	[-2.79 , 1.39]	.511
	Condition x Satisfaction with life	-.97	1.06	[-3.05 , 1.11]	.360
NA	Intercept	11.38	.45	[10.50 , 12.26]	.001
	Depressive symptoms	2.99	.53	[1.95 , 4.02]	.001
	SWL	-.27	.52	[-1.30 , .76]	.608
	Condition	-2.65	.89	[-2.02 , 1.49]	.766
	Condition x Depressive symptoms	2.09	1.05	[.01 , 4.16]	.049
	Condition x Satisfaction with life	1.08	1.05	[-.10 , 3.15]	.305
ND	Intercept	11.44	.44	[10.57 , 12.32]	.001
	Depressive symptoms	3.58	.52	[2.55 , 4.61]	.001
	SWL	-.74	.52	[-1.77 , .28]	.155
	Condition	.27	.88	[-1.48 , 2.01]	.765
	Condition x Depressive symptoms	-.02	1.05	[-2.08 , 2.05]	.988
	Condition x Satisfaction with life	-.12	1.04	[-2.18 , 1.93]	.906

Note. Condition coding (0 = special nostalgia, 1 = ordinary nostalgia and ordinary non-nostalgia)

Discussion

The present study built on the paper by Newman et al. (2020) on nostalgia in everyday life versus nostalgia when experimentally induced using the ERT. They found that when

measured in daily life, nostalgia had more negative than positive effects on well-being compared to nostalgia's effects when induced with the ERT in which participants are asked about their most nostalgic event. They proposed that asking participants about their most nostalgic event would lead to more intense and distinctive memories that hold more meaning, and are easily remembered. Additionally, Newman et al. (2020) argues that reflecting on these types of events will result in more positive and less negative affective scores because past events are stripped of negative affect faster than they are stripped of positive affect (Ritchie et al., 2006; Walker et al., 1997). Concurrently, they found that asking about ordinary nostalgic events in everyday life led to more negative and less positive affect compared to asking about the most nostalgic event through an experimental manipulation such as the event reflection task.

The purpose of the current study was to investigate whether the distinctiveness or intensity of the nostalgic event is the cause of the result found in Newman et al. (2020). We hypothesized that the participants who remembered special nostalgic events would have higher scores on positive affect measures and lower scores on negative affect measures compared to the participants that remembered ordinary nostalgic events (hypothesis 1). Our data analysis showed no significant differences in either positive (activated or deactivated) or negative (activated or deactivated) affect. Thus, our data did not support this hypothesis. Our second hypothesis was that special nostalgic events would result in more positive affect and less negative affect compared to the ordinary non-nostalgic condition, and that there would be no difference in affect between the ordinary nostalgic and ordinary non-nostalgic conditions. We did not find a significant difference in affect between the special nostalgic condition and the ordinary non-nostalgic condition, thus, the first part of the second hypothesis was not supported. The second

part of the second hypothesis was supported by the data, we found no significant difference in affect between the ordinary nostalgic and the ordinary non-nostalgic condition.

A possible explanation for the fact our data did not support our intensity hypotheses is that our manipulation of special nostalgia versus ordinary nostalgia was not strong enough. Our manipulation check showed that the special nostalgic condition did evoke more nostalgic feelings than the ordinary nostalgic condition, but this difference was not significant. This of course is problematic. It makes conclusions based on this research less strong since what we set out to investigate and manipulate has not been fully achieved. Any inferences about the intensity or distinctiveness of the nostalgic event cannot be made with certainty since we have not shown that the manipulations differ in their resulting nostalgic feelings. However, the insignificant difference in nostalgic feelings between the two experimental conditions can also be explained by a lack of power. Additionally, it could be the case that the word nostalgia automatically leads people to remember something special instead of something ordinary no matter the manipulation. To check for this effect future studies would be helped by verifying the essays. Future research would also benefit from using a bigger sample size which in turn will increase power when replicating the current paradigm.

Nonetheless, the manipulation check did show that our use of the ERT in both experimental conditions did elicit significantly more nostalgic feelings compared to the control condition. This is in line with previous research that employed the same experimental manipulation. However, the current study did not result in similar differences in affective outcome measures. This can not be fully explained by a lack of power since our power estimation was based on similar previous research that did find significant effects of nostalgia on

affect (e.g., Hepper et al., 2012; Stephan et al., 2012). Future research could address this alarming finding by replicating the current study as precisely as possible.

Lastly, this study investigated whether people high in depressive symptoms and low in satisfaction with life would show more negative and less positive affective scores in the ordinary nostalgic condition. We suggest that these people, because of their negative affectivity, mostly have negative events, or view events as more negative, during every-day life. For our third hypothesis we predicted that because high depressive symptoms and low satisfaction with life are related to negative thinking (Spinhoven, van Hemert, & Penninx, 2018), these people would have lower positive and higher negative affect scores in the ordinary nostalgic condition but not in the special nostalgic condition. As mentioned previously, the types of memories elicited by the classic ERT are likely to hold more meaning and are therefore remembered more easily, and these events lose their negative affect at a faster rate than they lose their positive affect (Ritchie et al., 2006; Walker et al., 1997). Our data analysis showed that people high in depressive symptoms showed more negative deactivated affect and more negative activated affect independent of the condition they were assigned to. Satisfaction with life did not significantly predict negative affect. Additionally, people low in satisfaction with life showed lower positive affect (both activated and deactivated), high depressive symptoms were related to lower positive deactivated affect no matter the condition. Thus, our hypothesis was not supported by the data, some main effects of depression and satisfaction with life were significant, and in line with our hypothesis, but no interaction was found. As stated before, this could be an issue of power in the current study. Another possible explanation could be that depressive people somehow remember events in a different way than non-depressive people, resulting in less positive memories in general and thus also less positive global and distinct memories.

Future research could focus on a different type of manipulation for distinct versus less distinct nostalgic events in order to investigate whether this could have an effect on positive and negative affect. It could be the case that the ordinary events that participants reported in the daily diary study by Newman et al. (2020) are so ordinary that people don't remember them when asked to reflect on them in the ERT. This would then result in less ordinary nostalgic events, minimizing the difference between these and most nostalgic events. Future research could counteract this by asking participants to reflect on an ordinary nostalgic event that they experienced today. Additionally, it would be interesting to see whether other underlying mechanisms of the effect found in Newman et al. (2020) can be identified, for example, research could focus on the global versus daily perspective on events that was alluded to in the introduction section of the current study. Another possibility is to look at the type of event that elicits nostalgia, for example, social events (wedding) or achievement events (graduation) specifically to determine whether different types of nostalgic events result in different outcomes on affective measures. Including more dependent measures of well-being and other constructs such as approach motivation, and social connectedness would also be interesting. Since these constructs have been investigated in previous research in which the ERT was employed to induce nostalgia (e.g. Stephan et al., 2014; Wildschut et al., 2006) but not often with different manipulations of nostalgia such as the ordinary nostalgia manipulation used in the current study. Research on well-being typically differentiates hedonic well-being from eudaimonic well-being with the former being focused on simple pleasures and the latter on development of skills, personality, and the importance of coming closer to your true nature (Compton & Hoffman, 2019). The present study only includes measures of affect, which is more in line with a hedonic view. Looking at well-being as an overarching construct that includes a sense of connection to

others and a sense of peace amongst others would be beneficial for a greater understanding of nostalgia and its relation to well-being.

As mentioned, the results from this study have to be taken with a grain of salt because of the fact the manipulation was not strong enough or the power of the study was not big enough to elicit significant differences in nostalgic feelings between the special nostalgia condition and the ordinary nostalgia condition. This is a significant limitation of the study; however, we did find a significant difference between the two experimental conditions and the control condition on nostalgic feelings but we were unable to replicate the basic ERT effects reported by Sedikides et al. (2015). Another limitation of the current study was the lack of affect analysis on the essays provided by the participants. The essays were not read or coded for positive or negative affectivity; therefore, we could not confirm or deny whether the affective signatures of the essays are in line with our hypothesis. Lastly, the study was conducted during the global COVID-19 pandemic. Since the pandemic is still partly developing, and no research on other pandemics and nostalgia and affect could be found we do not know how the current situation might have influenced people's cognitions and emotions. It could be the case for example that a pandemic makes people more nostalgic for a time before the pandemic. A strength of the study is the fact that experimental manipulation was used this makes it possible to make causal inferences about the results.

This study suggests that nostalgia, as induced with the ERT, is more limited than previously thought, although it should be noted that we did not assess all dependent variables of previous research. Additionally, we did not find that more ordinary nostalgia results in significantly lower positive affect and higher negative affect as expected based on the results of the daily diary study by Newman et al. (2020). Thus, the future of nostalgia is still quite open as the current results

contradict other recent findings on the positive effects of nostalgia and well-being outcomes. It could be that nostalgia indeed is a bittersweet emotion, but it could also be that when experienced throughout the day it leans more towards the bitter side.

References

- Batcho, K. I. (1995). Nostalgia: A psychological perspective. *Perceptual and Motor Skills*, 80, 131–143. <http://dx.doi.org/10.2466/pms.1995.80.1.131>.
- Boym, S. (2001). *The future of nostalgia*. New York, NY: Basic Books.
- Cheung, W. Y., Wildschut, T., Sedikides, C., Hepper, E. G., Arndt, J., & Vingerhoets, A. J. J. M. (2013). Back to the future: Nostalgia increases optimism. *Personality and Social Psychology Bulletin*, 39, 1484–1496. <http://dx.doi.org/10.1177/0146167213499187>.
- Compton, W. C. & Hoffman, E. (3rd edition). (2019) *Positive Psychology: The Science of Happiness and Flourishing*, CA: SAGE publishing
- Diener, E., Emmons, R. A., Larsen, R. J., & Griffin, S. (1985). The satisfaction with life scale. *Journal of Personality Assessment*, 49, 71-75
- 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, 102–119. <http://dx.doi.org/10.1037/a0025167>.
- Hepper, E. G., Wildschut, T., Sedikides, C., Ritchie, T. D., Yung, Y.-F., Hansen, N., et al. (2014). Pancultural nostalgia: Prototypical conceptions across cultures. *Emotion*, 14, 733–747. <http://dx.doi.org/10.1037/a0036790>.
- Hofer, J. (1934). Medical dissertation on nostalgia (C.K. Anspach, Trans.). *Bulletin of the History of Medicine*, 2, 376-391, Original work published 1688

- Hogg, M.A., Abrams, D., & Martin, G.N. (2010). Social cognition and attitudes. In Martin, G.N., Carlson, N.R., Buskist, W., (Ed.), *Psychology* (pp 646-677). Harlow: Pearson Education Limited.
- 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, 325-347. doi:10.1016/bs.aesp.2014.10.001
- Newman, D.B., Schwarz, N., & Stone, A.A (2020). Global reports of well-being overestimate aggregated daily states of well-being. *The Journal of Positive Psychology*. doi:10.1080/17439760.2020.1725608
- Prolific.co. (Version 2020). *Prolific / Online Participant Recruitment For Surveys And Market Research*. [online] Available at: <<https://www.prolific.co/>>
- Ritchie, T. D., Skowronski, J. J., Wood, S. E., Richard Walker, W., Vogl, R. J., & Gibbons, J. A. (2006). Event self-importance, event rehearsal, and the fading affect bias in autobiographical memory. *Self and Identity*, 5, 172–195. <http://dx.doi.org/10.1080/15298860600591222>
- Radloff, L. S. (1977). The CES-D Scale: A self-report depression scale for research in the general population. *Applied Psychological Measurement*, 1, 385–401. <http://dx.doi.org/10.1177/014662167700100306>
- Reid, C. A., Green, J. D., Wildschut, T., & Sedikides, C. (2014). Scent-evoked nostalgia. *Memory*. <http://dx.doi.org/10.1080/09658211.2013.876048>.
- Routledge, C., Wildschut, T., Sedikides, C., & Juhl, J. (2013). Nostalgia as a resource for psychological health and well-being. *Social and Personality Psychology Compass*, 7, 808–818. <http://dx.doi.org/10.1111/spc3.12070>.

- Routledge, C., Arndt, J., Wildschut, T., Sedikides, C., Hart, C., Juhl, J., et al. (2011). The past makes the present meaningful: Nostalgia as an existential resource. *Journal of Personality and Social Psychology*, *101*, 638–652. <http://dx.doi.org/10.1037/a0024292>.
- Rutledge, R. H. (1977). An old Yankee surgeon entertains a new idea. *Surgery*, *121*, 575–580. [http://dx.doi.org/10.1016/S0039-6060\(97\)90114-8](http://dx.doi.org/10.1016/S0039-6060(97)90114-8).
- Sedikides, C., Wildschut, T., Routledge, C., Arndt, J., Hepper, E. G., & Zhou, X. (2015). To nostalgize: Mixing memory with affect and desire. *Advances in Experimental Social Psychology*, *51*, 189-273 . doi:10.1016/bs.aesp.2014.10.001
- Sedikides, C., & Gregg, A. P. (2008). Self-enhancement: Food for thought. *Perspectives on Psychological Science*, *3*, 102–116. <http://dx.doi.org/10.1111/j.1745-6916.2008.00068.x>
- Spinhoven, P. van Hemert, A. M. & Penninx, B. W. (2018). Repetitive negative thinking as a predictor of depression and anxiety: A longitudinal cohort study, *Journal of Affective Disorders*, *241*, 216-225. <https://doi.org/10.1016/j.jad.2018.08.037>
- Seligman, M. E. P. (2011). Flourish: A visionary new understanding of happiness and well-being. New York, NY: Free press
- Stephan, E., Sedikides, C., & Wildschut, T. (2012). Mental travel into the past: Differentiating recollections of nostalgic, ordinary, and positive events. *European Journal of Social Psychology*, *42*, 290–298. <http://dx.doi.org/10.1002/ejsp.1865>.
- Stephan, E., Wildschut, T., Sedikides, C., Zhou, X., He, W., Routledge, C., et al. (2014). The mnemonic mover: Nostalgia regulates avoidance and approach motivation. *Emotion*, *14*, 545–561. <http://dx.doi.org/10.1037/a0035673>.
- Walker, W. R., Vogl, R. J., & Thompson, C. P. (1997). Autobiographical memory: Unpleasantness fades faster than pleasantness over time. *Applied Cognitive Psychology*,

11, 399–413. [http://dx.doi.org/10.1002/\(SICI\)1099-0720\(199710\)11:5399::AID-ACP4623.0.CO;2-E](http://dx.doi.org/10.1002/(SICI)1099-0720(199710)11:5399::AID-ACP4623.0.CO;2-E)

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

Qualtrics (Version CoreXM) [Online software]. Provo, UT.

Zhou, X., Sedikides, C., Wildschut, C., & Gao, D.-G. (2008). Counteracting loneliness: On the restorative function of nostalgia. *Psychological Science*, 19, 1023–1029. <http://dx.doi.org/10.1111/j.1467-9280.2008.02194.x>.

Zhou, X., Wildschut, T., Sedikides, C., Shi, K., & Feng, C. (2012). Nostalgia: The gift that keeps on giving. *Journal of Consumer Research*, 39, 39–50. <http://dx.doi.org/10.1086/662199>.

Appendix A Event reflection task distinct nostalgia

According to the Oxford Dictionary, “nostalgia” is defined as a “sentimental longing for the past.” Your task now will be to write about a nostalgic experience. Nostalgia can be evoked by many different memories. People can feel nostalgia when they think about very specific events they witnessed in the past like their high school graduation or other meaningful events they attended. But people also feel nostalgia when thinking about everyday objects and events from their past like old landline phones, clothing from past decades, or tv shows/movies they watched as a child.

Given that so many things can inspire nostalgia, we would like to ask you to focus specifically on nostalgic experiences of the former kind. This standardizes what our participants write about and makes our data more comparable. So please think of a distinct nostalgic event in your life. Specifically, try to think of the past event that makes you feel most nostalgic. As mentioned above, classic examples of such events are high school graduations etc., that is, life events that were very important to you in the past. But you are of course free to come up with any event that fits this definition. But please try to adhere to the definition we provided above.

Using the space provided below, for the next few minutes, we would like you to write about the event. Immerse yourself into this experience. Describe the experience and how it makes you feel. Bring this experience to mind. Immerse yourself in the experience. How does it make you feel? Please spend a couple of minutes thinking about how it makes you feel. Please write down four keywords relevant to this nostalgic memory (i.e., words that describe it). Using the space provided below, for the next few minutes, we would like you to write about the event. Remember your essay needs to be between 50 to 300 words long and you have at least 3 minutes to complete it.

Appendix B Event reflection task ordinary nostalgia

According to the Oxford Dictionary, “nostalgia” is defined as a “sentimental longing for the past.” Your task now will be to write about a nostalgic experience. Nostalgia can be evoked by many different memories. People can feel nostalgia when they think about very specific events they witnessed in the past like their high school graduation or other meaningful events they attended. But people also feel nostalgia when thinking about everyday objects and events from their past like old landline phones, clothing from past decades, or tv shows/movies they watched as a child.

Given that so many things can inspire nostalgia, we would like to ask you to focus specifically on nostalgic experiences of the latter kind. This standardizes what our participants write about and makes our data more comparable. So please think of an ordinary nostalgic event in your life. Specifically, try to think of a past event that recently made you feel nostalgic. As mentioned above, classic examples of such events are things (e.g., clothing) or media (e.g., TV shows), that is, things that were part of your everyday life in the past. But you are of course free to come up with any object or event that fits this definition. But please try to adhere to the definition we provided above.

Using the space provided below, for the next few minutes, we would like you to write about the event. Immerse yourself into this experience. Describe the experience and how it makes you feel. Bring this experience to mind. Immerse yourself in the experience. How does it make you feel? Please spend a couple of minutes thinking about how it makes you feel. Please write down four keywords relevant to this nostalgic memory (i.e., words that describe it). Using the space provided below, for the next few minutes, we would like you to write about the event.

Remember your essay needs to be between 50 to 300 words long and you have at least 3 minutes to complete it.

Appendix C Control condition

Your task will be to write about an ordinary event in your life. This ordinary event could be about many different things. It could be about a typical interaction you have had with people or a common activity that you have engaged in. As long as it is an event that has happened to you in your own life.

Please bring to mind an ordinary event in your life. Specifically, try to think of a past event that is ordinary. Bring this ordinary experience to mind. Immerse yourself in the ordinary experience. How does it make you feel? Please spend a couple of minutes thinking about how it makes you feel. Please write down four keywords relevant to this ordinary event (i.e., words that describe the experience).

Using the space provided below, for the next few minutes, we would like you to write about the event. Immerse yourself into this experience. Describe the experience and how it makes you feel. Bring this experience to mind. Immerse yourself in the experience. How does it make you feel? Please spend a couple of minutes thinking about how it makes you feel. Please write down four keywords relevant to this nostalgic memory (i.e., words that describe it). Using the space provided below, for the next few minutes, we would like you to write about the event. Remember your essay needs to be between 50 to 300 words long and you have at least 3 minutes to complete it.