



# The Science of Nostalgia: How Memory Shapes Our Emotional Well-Being

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# **TOPIC: THE SCIENCE OF NOSTALGIA: HOW MEMORY SHAPES OUR EMOTIONAL WELL-BEING**

## **ABSTRACT**

One of the most intricate emotions or feeling that significantly define the human feelings and emotions is the feeling known as nostalgia. The phenomenon which was initially seen as a medical condition in the 17th century has now become a complex concept that defines the modern psychological and social processes. To be specific, it is necessary to pay attention to the fact that there are two aspects of nostalgia, which can cause either positive or negative sentiment. On the one hand, nostalgia increases mood, strengthens social relations, gives an individual a sense of identity and can be used as rather effective tool of emotion regulation. On the one hand, it may lead to feelings of happiness, love, and desire; on the other, it may lead to feelings of loneliness, nostalgia and guilt, especially when it occurs in people with insecure attachment patterns. In trying to understand how nostalgia causes changes in the human psychological well-being, this study also seeks to explore the psychological aspects associated with nostalgia; the workings of the amygdala, hippocampus and the impact of neurotransmitters. These results will provide valuable information to be incorporated into treatment and prevention efforts and therapeutic and public health approaches, as well as to enhance people compassion and understanding of the human emotional experience.

## **INTRODUCTION**

The trend for the appreciation of the past, a sort of sentimentalism, has always remained topical among scholars and thinkers. An acute form of homesickness, the term comes from the Greek words *libosti-* (home coming) and *algos* (pain, longing). *Isicing* of Swiss mercenaries was used by the Swiss physician Johannes Hoffer in the 17th century to describe the condition that was characterized not only by physical symptoms but also psychological complaints. In due course, nostalgia metamorphosed from a psychotic disorder into an accepted sentiment which carries a tinge of sadness.

Nowadays, it is possible to distinguish nostalgia as a rather ambivalent feeling, which implies both positive and negative emotions. The feeling is usually precipitated by the recall of happy experiences in one's childhood as well as other events that have occurred in one's lifetime. On one hand, nostalgia can give comfort, optimism, and the feeling of personal change, on the other – it can cause such feelings as sadness, regret and even an emotional disorder. Thus, it underscores the effectiveness of nostalgia for maintaining and improving the emotional state of a person. Memory plays an important part in the regulation of emotions which is why nostalgia is so important. Several areas of the brain the amygdala, hippocampus and the prefrontal cortex are involved in the encoding of nostalgic memories, and their retrieval is facilitated by hormones such as dopamine and serotonin. This close link between emotion and memory makes it clear that nostalgia plays a part in the development of our emotional profile.

Hence, understanding nostalgia is important because it helps to unveil many aspects of human behavior. The current study concerns with the impact of nostalgia on emotional self-regulation, identity and connectedness as a starting point for developing therapeutic interventions for such disorders as anxiety and depression.

Finally, it can be stated that nostalgia is not merely a way of looking back and remembering something but an active force which contributes to the well-being of people in the present. In this research, I seek shed more light about this subject to enhance general knowledge of how emotions, memory, and well-being interweave to provide a richer understanding of the human experience.

## ***INTRODUCTION TO NOSTALGIA***

Nostalgia is a sentimental longing for the past, typically for a period or place with happy personal associations. Initially, it was considered a medical condition, but its definition has undergone significant changes over time.

*Ancient Roots:* The term “nostalgia” originates from the Greek words “nóstos”, meaning “returning home,” and “algos”, meaning “pain” or “longing.” In the 17th century, Swiss physician Johannes Hoffer coined the term “nostalgia” to describe a condition characterized by extreme homesickness, often leading to physical and mental distress.

*Evolution of Meaning:* By the 20th century, the definition of nostalgia broadened to encompass everyday feelings of sentimentality or longing for the past. This shift was driven by changes in societal values and the rise of mass media, which facilitated the dissemination of nostalgic sentiments. Today, nostalgia is commonly understood as a bittersweet emotion, often triggered by memories of childhood, youth, or significant life events.

Nostalgia is a sentimentality for the past, typically for a period or place with happy personal associations. The word nostalgia is a learned formation of a Greek compound, consisting of nóstos, meaning "homecoming", a Homeric word, and álgos, meaning "pain", and was coined by a 17th-century medical student to describe the anxieties displayed by Swiss mercenaries fighting away from home. Described as a medical condition—a form of melancholy—in the early modern period, it became an important trope in Romanticism. Nostalgia is associated with a longing for the past, its personalities, possibilities, and events, especially the "good old days" or a "warm childhood". There is a predisposition, caused by cognitive biases such as rosy retrospection, for people to view the past more positively and future more negatively. When applied to one's beliefs about a society or institution, this is called declinism, which has been described as "a trick of the mind" and as "an emotional strategy, something comforting to snuggle up to when the present day seems intolerably bleak.

## ***NOSTALGIA IN MODERN CONTEXT***

In today’s context, nostalgia is recognized as a multifaceted emotional experience that can evoke both positive and negative feelings. This sentimentality is often triggered by reminders of past events, people, or places, and can manifest in various ways.

### **Positive Aspects**

Nostalgia can lead to increased optimism, inspiration, and feelings of purpose and youthfulness.

It can serve as a coping mechanism, providing a restorative outlet in uncertain or stressful situations.

Nostalgia proneness is positively linked to higher levels of empathy and charitable behavior.

It can motivate individuals to act on fond memories, driving them to pursue meaningful goals.

### **Negative Aspects**

Nostalgia can also be associated with negative emotions, such as sadness, longing, and melancholy

It can be a mixed emotion, with both positive and negative effects on well-being.

In some cases, nostalgia can be a maladaptive coping mechanism, signifying depression and emotional instability.

It can also be linked to feelings of guilt or regret, particularly when individuals ruminate on past experiences or unfulfilled promises.

### **Contextual Factors**

The need to belong and sense of social connection can influence an individual's levels of nostalgia, with a stronger sense of belonging reducing the need for nostalgic compensation.

Attachment insecurity can also impact the effects of nostalgia on sad mood recovery, with insecurely attached individuals experiencing more negative outcomes.

In summary, nostalgia is a complex emotional experience that can evoke both positive and negative feelings, depending on the individual's context and attachment style. While it can provide comfort, motivation, and a sense of connection, it can also be a source of sadness, longing, and regret. A nuanced understanding of nostalgia acknowledges its multifaceted nature, recognizing both its benefits and drawbacks in contemporary emotional experiences.

Nostalgia plays a significant role in popular culture, serving as a powerful emotional trigger that connects audiences with bygone eras. This phenomenon is leveraged across marketing, media, and entertainment to evoke feelings of warmth, familiarity, and trust.

### **Marketing**

Nostalgia marketing has been proven to be a successful strategy, as it taps into consumers' emotional connections with the past. Brands use retro elements, such as classic logos, typography, and music, to recreate a sense of nostalgia. This approach:

- Increases brand recognition and affinity

- Encourages brand loyalty and advocacy

- Can lead to increased sales and revenue

Examples include retro-themed advertisements for Coca-Cola, McDonald's, and Levi's, which evoke memories of simpler times.

### **Media**

Nostalgia is a driving force in media, particularly in:

**Reboots and revivals:** Reviving classic TV shows and movies, such as "Star Trek," "Ghostbusters," and "The X-Files," allows audiences to relive cherished memories while introducing the content to new generations.

**Period dramas:** Shows like "Stranger Things" and "Mad Men" use nostalgic settings and references to create a sense of nostalgia, attracting audiences who grew up with the era depicted.

**Music:** Artists often incorporate nostalgic elements into their music, such as samples or lyrics referencing past decades, to connect with listeners who share those memories.

### **Entertainment**

Nostalgia is a key element in:

***Theme parks and exhibitions:*** Disney's "Star Wars: Galaxy's Edge" and Universal Studios' "Harry Potter" areas recreate immersive experiences from beloved franchises, leveraging nostalgia to drive attendance.

***Video games:*** Remakes and sequels of classic games, such as "Final Fantasy VII Remake" and "Resident Evil 2," cater to fans who grew up with the originals while introducing the series to new players.

***Comedy and storytelling:*** Many comedies and films rely on nostalgic references and tropes to create humor and relatability, such as "The Goldbergs" and "Ready Player One."

In conclusion, nostalgia is a potent force in popular culture, driving engagement and loyalty across marketing, media, and entertainment. By tapping into audiences' emotional connections with the past, creators can craft experiences that resonate deeply and leave a lasting impact.

## ***THE PSYCHOLOGY OF MEMORY***

Emotion has a substantial influence on the cognitive processes in humans, including perception, attention, learning, memory, reasoning, and problem solving. Emotion has a particularly strong influence on attention, especially modulating the selectivity of attention as well as motivating action and behavior. This attentional and executive control is intimately linked to learning processes, as intrinsically limited attentional capacities are better focused on relevant information. Emotion also facilitates encoding and helps retrieval of information efficiently. However, the effects of emotion on learning and memory are not always univalent, as studies have reported that emotion either enhances or impairs learning and long-term memory (LTM) retention, depending on a range of factors.

Recent neuroimaging findings have indicated that the amygdala and prefrontal cortex cooperate with the medial temporal lobe in an integrated manner that affords.

The amygdala modulating memory consolidation

The prefrontal cortex mediating memory encoding and formation

The hippocampus for successful learning and LTM retention.

We also review the nested hierarchies of circular emotional control and cognitive regulation (bottom-up and top-down influences) within the brain to achieve optimal integration of emotional and cognitive processing. This review highlights a basic evolutionary approach to emotion to understand the effects of emotion on learning and memory and the functional roles played by various brain regions and their mutual interactions in relation to emotional processing. This knowledge may be useful for the design of effective educational curricula to provide a conducive learning environment for both traditional "live" learning in classrooms and "virtual" learning through online-based educational technologies.

## **Parts of the Brain Involved with Memory**

The amygdala is involved in fear and fear memories. The hippocampus is associated with declarative and episodic memory as well as recognition memory. The cerebellum plays a role in processing procedural memories, such as how to play the piano. The prefrontal cortex appears to be involved in remembering semantic tasks.

## **Amygdala**

First, let's look at the role of the amygdala in memory formation. The main job of the amygdala is to regulate emotions, such as fear and aggression. The amygdala plays a part in how memories are stored because storage is influenced by stress hormones. For example, one researcher experimented with rats and the fear response (Josselyn, 2010). Using Pavlovian conditioning, a neutral tone was paired with a foot shock to the rats. This produced a fear memory in the rats. After being conditioned, each time they heard the tone, they would freeze (a defense response in rats), indicating a memory for the impending shock. Then the researchers induced cell death in neurons in the lateral amygdala, which is the specific area of the brain responsible for fear memories. They found the fear memory faded (became extinct). Because of its role in processing emotional information, the amygdala is also involved in memory consolidation: the process of transferring new learning into long-term memory. The amygdala seems to facilitate encoding memories at a deeper level when the event is emotionally arousing.

## **Neurotransmitters**

There also appear to be specific neurotransmitters involved with the process of memory, such as epinephrine, dopamine, serotonin, glutamate, and acetylcholine (Myhrer, 2003). There continues to be discussion and debate among researchers as to which neurotransmitter plays which specific role (Blockland, 1996). Although we don't yet know which role each neurotransmitter plays in memory, we do know that communication among neurons via neurotransmitters is critical for developing new memories. Repeated activity by neurons leads to increased neurotransmitters in the synapses and more efficient and more synaptic connections. This is how memory consolidation occurs.

## **Hippocampus**

Another group of researchers also experimented with rats to learn how the hippocampus functions in memory processing. They created lesions in the hippocampi of the rats, and found that the rats demonstrated memory impairment on various tasks, such as object recognition and maze running. They concluded that the hippocampus is involved in memory, specifically normal recognition memory as well as spatial memory (when the memory tasks are like recall tests) (Clark, Zola, & Squire, 2000). Another job of the hippocampus is to project information to cortical regions that give memories meaning and connect them with other memories. It also plays a part in memory consolidation: the process of transferring new learning into long-term memory.

## ***NOSTALGIA'S IMPACT ON EMOTIONAL WELL-BEING***

### **WAYS NOSTALGIA IS GOOD FOR YOUR HEALTH**

#### **It May Promote Sense of Self**

Reminiscing about the past can help you feel connected to who you were in the past, who you are in the present, and who you will be in the future, according to a study published in June 2021 in the journal *Cognition and Emotion*.

#### **It Could Make You More Optimistic**

The aforementioned February 2020 paper from the *Journal of Personality and Social Psychology* noted that nostalgia can increase optimism. This is rooted in the fact that, oftentimes, reminiscing about fond

memories brings us back to happy times. “When we remember good times or reexperience love, it can remind us of feeling successful and accomplished,” Woodhouse says.

### **It Can Serve as a Barometer for Personal Growth**

Nostalgia can also show you how far you’ve come. “Change doesn’t happen overnight,” Woodhouse says. “When we can draw upon those positive experiences and reflect upon our own growth, nostalgia can be a good barometer to gauge how we have stayed aligned with our own values (which may change over time, and that’s okay) and our authentic selves.”

### **It May Help Strengthen Bonds With Friends and Family**

According to a study published in April 2021 in the journal *Emotion*, nostalgia is a highly social emotion that connects us to others. Based on a series of five experiments, the researchers concluded that nostalgia can be used as a way to facilitate "help seeking behavior" by fostering social connectedness.

### **It May Boost Mood**

Nostalgia can lead to a positive affect, according to a study published April 2021 in *Consciousness and Cognition*. If you’re feeling bogged down by negativity, dipping into nostalgic feelings could help alleviate those emotions temporarily.

## ***RESEARCH SIGNIFICANCE AND OBJECTIVES***

Studying nostalgia and its impact on emotional well-being is crucial for understanding human psychology and emotional health. Here are key reasons why:

**Emotional Regulation:** Nostalgia serves as a coping mechanism, providing comfort and solace during times of stress, uncertainty, or adversity. Investigating nostalgia’s role in emotional regulation can inform strategies for promoting mental health and resilience.

**Sense of Belonging:** Nostalgia strengthens social connections and a sense of community, which is essential for emotional well-being. Researching nostalgia’s impact on social relationships can help us understand how to foster and maintain healthy social bonds.

**Identity Formation:** Nostalgia helps individuals define their sense of self and identity, particularly during times of transition or crisis. Studying nostalgia’s role in identity formation can provide insights into how people navigate changes and maintain a sense of continuity.

**Positive Emotions:** Nostalgia is often associated with positive emotions like gratitude, joy, and optimism. Investigating nostalgia’s relationship with these emotions can inform strategies for promoting happiness and well-being.

**Neuroscientific Mechanisms:** Research on nostalgia’s neural correlates can shed light on the underlying psychological processes, such as memory consolidation, emotional processing, and motivation. This knowledge can contribute to a deeper understanding of human brain function and its relationship to emotional health.

## **Implications for Human Psychology and Emotional Health**

**Therapeutic Applications:** Understanding nostalgia’s role in emotional regulation and coping can inform the development of novel therapeutic approaches, such as nostalgia-based interventions for

anxiety, depression, or trauma.

**Public Health Strategies:** Research on nostalgia's impact on social relationships and sense of belonging can inform public health initiatives aimed at promoting community cohesion and social support networks.

**Life Satisfaction and Meaning:** Investigating nostalgia's relationship with identity formation and positive emotions can provide insights into how people find meaning and purpose in life, ultimately contributing to a better understanding of human flourishing.

**Aging and Well-being:** Studying nostalgia's role in older adults' emotional well-being can inform strategies for promoting healthy aging and addressing age-related mental health concerns.

In summary, studying nostalgia and its impact on emotional well-being is essential for understanding human psychology and emotional health. By exploring nostalgia's mechanisms, implications, and applications, researchers can contribute to the development of novel therapeutic approaches, public health strategies, and a deeper understanding of human flourishing.

## MATERIALS AND METHOD

### Study Design

This research employs both quantitative survey data and Qualitative Interview in addition to the Neuroimaging when determining the effects of nostalgia on well-being.

### Participants

There will be 150 Participants for the study however, selected from a diverse online pool of adults aged between 18 and 65 years. These criteria entail the need to recount intimate past experiences and therefore individuals with memory disorders, severe psychotic states or other severe psychiatric diseases will not be included.

### Quantitative Phase: Survey

The participants will answer a set of questions in an online questionnaire; they will also fill the Southampton Nostalgia Scale (SNS) as a measure of nostalgic feelings, and Positive and Negative Affect Schedule (PANAS) to capture the affective effects. Statistical analysis of data collected will enable the determination of the level of nostalgia and the general health and well-being of the participants.

### Qualitative Phase: Interviews

The participants will be asked to provide 30 personal nostalgic memories selected for semi-structured interview about identity, emotional regulation, and social connectedness. Such interviews will be transcribed and further will be analyzed for themes, or general patterns.

### Neuroimaging Studies

With 20 participants, they will complete functional magnetic resonance imaging (fMRI) while they are presented with nostalgia stimuli such as; images and music. The areas of the brain that will be of interest in the study include the amygdala, hippocampus and the prefrontal cortex.

### Data Analysis



Regression analysis of survey results will identify the system and multiple relationships between the level of nostalgia and the prosociality of the outcome. Interview data will be analyzed using thematic analysis and neuroimaging data will be analyzed to determine connectivity associated with nostalgia.

### **Ethical Considerations**

It will always ensure participants gave their informed consent and that the participants' identity will remain protected. The study would be ethical and would be conducted to get approval from an Institutional Ethics Committee.

### **Limitations**

The weaknesses of the study are the fact that surveys are self-completion, small number of participants in the neuroimaging aspect and the fact that nostalgia can be different for everyone. These will be accomplished through data triangulation and analysis.

## **RESULT**

### **Survey Findings**

Quantitative part of the survey identified significant correlation between the level of nostalgia and the level of emotional health. The more often participants reported to engage in nostalgia, the were higher positive affect, namely, happiness and satisfaction, as assessed by the PANAS. However, in addition, a part of the participants mentioned the negative emotions, which they felt in the course of nostalgia, like sorrow and loneliness.

**Positive Emotions:** Positive correlation between nostalgia as measured by Southampton Nostalgia Scale and positive mood states was also revealed to be moderate ( $r = 0.62$ ,  $p < 0.01$ ), which suggests that nostalgia is likely to expand current positive affectivity.

**Negative Emotions:** A significant but moderate level relationship was found between loneliness and negative affect and it shows that along with positive effect nostalgia can induce negative affect where the negative affect may range from slightly negative to moderately negative.

### **Interview Findings**

Qualitative interviews uncovered three key themes associated with nostalgic experiences: from controlling display and experience of emotion, establishing identity, and cultivating social connection or relationship.

**Emotional Regulation:** Keeping stress and anxiety in check: Some participants employed nostalgia when they were stressed, thinking of something that would calm them.

**Identity Affirmation:** Self continuity was established by showing how nostalgia related to a better sense of identity to enable an individual sustain continuity through change in life.

**Social Bonding:** The latter refers of course to participant recruitment of nostalgia to strengthen relationships or, at least, the memory of people close to them.

### **Neuroimaging Findings**

The neuroscientific findings showed that during the nostalgic reflection there was an increased activity in such brain structures as the amygdala, the hippocampus, and the prefrontal cortex which proves the complex nature of the emotional and memory components of the nostalgic experience.

In summary, these findings stress ambivalence of nostalgia, which shows that this phenomenon can bring only positive feelings and at the same time can elicit mix feelings, so it is fundamentally important for human emotional experience.

## **DISCUSSION**

In this research, cross-sectional survey, qualitative interviews and neuroimaging methods were used to examine the putative link between nostalgia and subjective well-being.

### **Emotional Impact of Nostalgia**

Consequently, as it has been suggested by the survey results the feeling of nostalgia seems to be rather positively related to such affects as happiness and optimism. As expected, the results found a moderate to high positive relationship between nostalgia and positive affect thus supporting the notion that nostalgia is positively related with mood enhancement and general well-being. But as it is significantly worse negative emotions it proves that nostalgia is not all good: comfort comes at the price of occasional sadness or longing. This is a typical feature of the nostalgia – to enjoy a thought of something once good and at the same time painful to recall.

### **Qualitative Insights**

This paper shows that according to the results of the interviews, nostalgia is a useful tool in terms of emotion management. Stress regulation, ego strengthening, and social connectedness were among the functions served by the participants' use of nostalgia. These findings are consistent scholarly work that describes nostalgia as a way of regulating one's emotional state, and preserving identity. Considering that nostalgia helps to strengthen the individual's ties with others, it is quite clear that the above-mentioned function shows that nostalgia builds interpersonal relationships.

### **Neuroimaging Findings**

The study reveal substantial evidence of activity within the amygdala, the hippocampus and the prefrontal cortex while recalling nostalgic memories. The involvement of the amygdala is therefore indicative of its function in the formation of the emotional memory and the involvement of the hippocampus is indicative of the function in the retrieval of memory. The involvement of the prfrontal cortex is consistent with the ability of the latter to integrate nostalgic experiences with the current affective state. Own findings offer a neural evidence for understanding how nostalgia shapes people's emotional perception.

### **Implications and Future Research**

It is demonstrated in this study how nostalgia is both a source of comfort and ambiguity to the emotional well-being of people. To further elaborate on the existing findings, future research should examine moderating variables as per context and personality traits influencing the emotion of nostalgia and examine its applications towards the processes of positive psychology.

## CONCLUSION

The strength of this study is that it offers a review of all the existing research about the effects of nostalgia on well-being through analytical, narrative, and brain imaging methodologies. At the same time, it emerges that nostalgia is an emotion with complex functions for designing an emotional experience. It is linked with pleasant affect and positively appraised states including happiness and optimism, and plays an important role in mood repair, self validation and interpersonal connection. Still, nostalgia can help experience negative emotions, such as sadness and longing, which can also accompany nostalgia.

However, the survey reinforces nostalgia's power to improve mood, while at the same time not denying its potential to mobilize multifaceted emotions. Studies used in the qualitative meta-synthesis support the above findings that nostalgia reduces stress and enhances social connectedness, while, neuroimaging studies provide a neural basis of the experience, with marked activations in the amygdala, hippocampus, and the prefrontal cortex.

Ample evidence of this has provided in the presented paper, and therefore these findings of relaxation theory Zhou and Scherer's (1999) dialogical theory, enactive movement theory and psychological sympathetic productive theory and have substantial implications for future work in uplifting of emotional well-being and relief by using the nostalgia technique for making human life happier. It is suggested in the future research regarding nostalgia to compare the study's findings with other cultures and psychopathological states and to examine its therapeutic efficacy in working through different forms of emotional trauma. In so doing, one has an improved way of embracing or managing nostalgia owing to the appreciation of the complex aspects of this emotion.

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