

Music and Nostalgia: a cross-generational investigation into the reminiscence bump, memory, and other extra-musical stimuli of nostalgia

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ABSTRACT

The following study explores nostalgia-evoking music cross-generationally. The study focuses on the reminiscence bump, memory, and nostalgia. Participants were asked to complete a survey which consisted of naming pieces of music or songs they find nostalgic, detailing how and when they were first introduced to it, who introduced them to it, whether they have a memory connected to the piece of music, and what type of music they generally find most nostalgic. Results show that the childhood years are most nostalgic for participants below the age of 25, whereas for participants above the age of 25, the teenage years – the reminiscence bump period – are more nostalgic. Most participant's memories connected to the music they chose seem to be associated with childhood or family, suggesting that these associations are of particular significance with regards to eliciting nostalgia. Parents also seem to have a significant role in the music participants find nostalgic.

1. INTRODUCTION

Nostalgia fascinates psychologists due to its pervasive nature and is considered by many to be one of the most important effects of music (Sloboda, 1999). Music forms a significant part of almost everyone's life, whether listening to it in the car, on the way to work, or whilst studying. It is also almost certainly present at one's most important life events, and consequently has a powerful ability to evoke nostalgia and causes us recall distinct and vivid memories.

Numerous studies have researched music-evoked nostalgia and the link between nostalgia and emotion. Barrett et al.'s (2010) study, for example, involved participants listening to randomly selected excerpts of popular music and rating how nostalgic each song made them feel. They found that nostalgia was stronger in familiar songs and had a number of emotional effects: nostalgia was associated with joyful or sad feelings, whereas non-nostalgic music was associated with feelings of irritation. Other studies have explored memory and nostalgia. For example, Mahon et al.'s (2023) study documents the power of music to bring to mind previous events and times. Their study took 30 university students and measured changes in electrodermal activity and recorded personalised responses. They found "autobiographical salience was the best predictor of music-evoked nostalgia." In other words, music which had been previously heard by the participant and was connected to a specific memory was most prone to evoking nostalgia. These studies highlight music's powerful ability to both help recall memories but also to elicit various emotions.

Another area of interest with regards to music-evoked nostalgia is the reminiscence bump. The reminiscence bump can be defined as the tendency for adults to have enhanced recollection of events or memories from adolescence or childhood years (Jansari & Parkin, 1996). Rathbone et al.'s (2008) define the reminiscence bump "between ages 10 and 30". This study ultimately reveals that not all of our memories are equal, and that our teenage ones, being the most formative, are the ones which we tend to cherish the most. The study also reveals the important relationship between memory and identity and highlights the importance of the 'reminiscence bump' years in forming who we are. Renwick and Woodhouse (2023) investigate musical reminiscence bumps more specifically, concluding that the musical reminiscence bump is common across all age groups, for a variety of demographics, and is not restricted to particular musical genres.

One of the largest studies in this field surveyed 470 adult participants and showed them 111 popular songs which had featured in the music charts between 1950 and 2015 (Jakubowski et. al, 2020). Participants rated the extent to which they were familiar with the song, and the degree to which they had personal memories associated with the songs. The study concluded that a musical reminiscence bump during the teenage years can be found consistently across participants from the ages of 18-82. Liking ratings were more varied and there seemed to be a spike in young adults liking music from their parents' generation. This is something that will be further explored in this study.

Summary of aims. This study explores the 'musical reminiscence bump'. This paper expands on existing research by surveying a wide age range of children and adults, exploring music from a wide variety of genres, and investigating the types of memory elicited by nostalgic music. This paper looks specifically at where participants first heard the music they selected, what age they were, and who introduced it to them.

Crucially, this paper explores four main areas. These are the reminiscence bump and its relevance to music-evoked nostalgia, nostalgia ages cross-generationally, the types of auto-biographical memory elicited by nostalgia inducing music. This paper aims to identify the significance of the reminiscence bump with regards to music that participants find nostalgic and identify which other stimuli recur in terms of evoking nostalgia.

2. METHODS

Design. This is an empirical research study which investigates both qualitative and quantitative data. The primary aim of this research is to identify any correlations between the timing of the musical reminiscence bump and age of participants to understand cross-generational music-evoked nostalgia. Secondarily, the study investigates any other potential extra-musical stimuli of nostalgia as well as trends in memories evoked by nostalgia.

The study was a cross-sectional survey conducted via Qualtrics including participants across varyious age groups. This resulted in both quantitative information about reminiscence age and qualitative information regarding participant descriptions of memories.

Participants. The survey was disseminated via social media platforms, university societies and emails, and personal contacts. 90 participants responded; however, only 57 fully completed the survey and were therefore included in the study. A main aim of the study was to include a wide selection of age groups to better investigate the reminiscence bump cross-generationally. There were 9 age groups within the sample: 14-16, 16-18, 18-20, 20-22, 22-24, 24-30, 30-50, 50-70, and 70+. Despite the wide age range of participants, there were two age groups which were most prominent: the 20–22-year-old age group represented 38.6% of the sample, and the 30–50-year-old age group represented 22.8% (Figure 1).

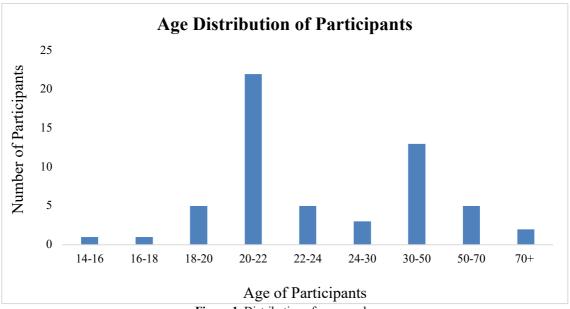


Figure 1. Distribution of age sample.

Materials/Stimuli. The survey was conducted online via Qualtrics. After confirming their age, the main questionnaire started by asking them to identify two or three songs they find nostalgic and whether they are connected to a particular memory. Next, they were asked when they first heard these pieces and how old they were in order to gauge whether the reminiscence bump was of any recurring importance or if there were other ages of recurring significance. A multiple-choice question following asking them to identify who introduced the pieces to them (see Appendix). An additional 'other' box gave participants the option to provide an alternative person or if they found the piece themselves. The next question asked whether there were specific memories

associated with the pieces they chose and, if so, to describe the memories in as much detail as they felt comfortable with. The questionnaire finished with a multiple-choice question asking participants what music makes them feel most nostalgic (see Appendix A).

Procedure. Participants were invited to take part in the online study via a link circulated around various social media platforms. The survey began with a consent form and participants were assured of anonymity and confidentiality. The first section of the survey consisted of questions about age and identifying pieces which they find nostalgic. The second section of the survey consisted of multiple-choice questions to identify who introduced this music to participants. Following this, the survey asked participants to describe any specific memories associated with nostalgia-inducing music. The survey concluded by asking participants what types of music makes them feel most nostalgic. The questionnaire can be viewed in full in the Appendix.

3. RESULTS

The data collected through the online survey was exported and grouped together in Microsoft Excel. From here, any incomplete or unintelligible data was removed, leaving 57 full participant responses. A descriptive graph showing participant ages when first having heard music they found nostalgic was plotted, shown below in Figure 2.

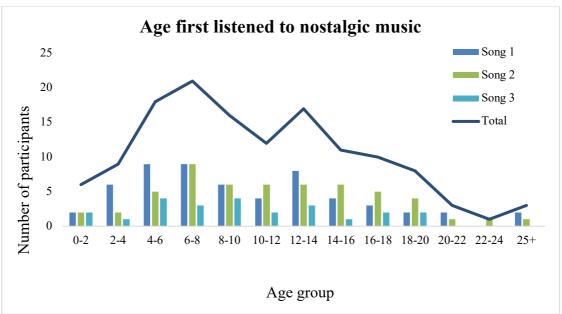


Figure 2. Age when first listened to nostalgic-inducing songs.

Figure 2 shows data correlating to participant answers to the third question of the survey, asking them to identify two or three songs they find nostalgic. The graph shows the nostalgia age for each separate song, as well as for the total responses. One can observe a peak in nostalgia between the participant age group of 6-8 as well as 12-14.

As well as looking into general nostalgia age amongst participants, we can also explore the nostalgia age across generation and look at whether there are any trends. The table below (Table 1) shows the total number of participant nostalgia ages, but also dissects the data into participant age groups.

Age	Total number of participant nostalgia ages													
	0-2	2-4	4-6	6-8	8-10	10-12	12-14	14-16	16-18	18-20	20-22	22-24	25 +	
0-14														
14-16			3											
16-18			3											
18-20	2		3	5		1	2							
20-22	5	2	5	14	5	3	6	7	4	3	2			
22-24	2			3	4	4		2	2					
25-35							1			2				
35-50			5		7	5	2	4		2		1		
50-70	2				1		2		1	1			3	
70+								1	3					

Table 1: Relationship between participant age and nostalgia age.

These results in Table 1 found that the most common nostalgia ages (CNA) amongst younger participant age groups tend to be within the childhood years. For the 14–16 and 16(17?)-18-year-old participants, the most CNA is between the ages of 4-6. For 18–20 and 20(21?)-22-year-olds the most CNA were between the ages of 6-8. Most CNA amongst 25+ age groups were more varied, and often within their teenage years. Most participants in the 25–35-year-old age group logged their CNA as 18-20, 35–50-year-olds as 8-10, 50–70-year-olds as 25+ years old, and 70+ year olds as 16-18.

These results suggest that participants below the age of around 25 tend to find their childhood years more nostalgic, whereas ages 25+ tend to find their teenage years the most nostalgic. This highlights that the reminiscence bump is more significant amongst older age groups.

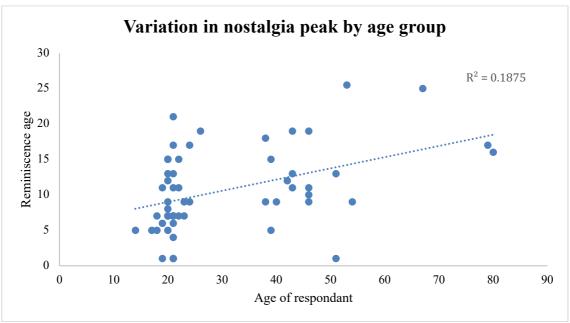


Figure 3. Correlation between participant age and nostalgia age.

Figure 3 shows that although the average nostalgia age is lower for participants below the age of 30, there is variation amongst participants. The correlation coefficient ($R^2 = 0.1875$) shows a weak positive relationship between participant age and nostalgia age (CNA), likely due to the disproportionate number of student versus older participants. The mean nostalgia age (CNA) for students was 9.24 (SD = 5), and the mean nostalgia age for over 25s was 13.33 (SD = 6.13). The T-test analysing the difference in CNA between participants age 25+ versus younger participants was statistically significant (p<.01).

Another T-test was run excluding participants below the age of 18. The result was significant (p=0.015) and was very similar, with a mean nostalgia age of 9.49 for under 25s and a mean nostalgia age of 13.33 for over 30s.

The next part of the study looks at ways in which participants were first introduced to music they find nostalgic. Results found for most participants music introduced by their parents was the most nostalgic. This is evident in Figure 4 shown below.

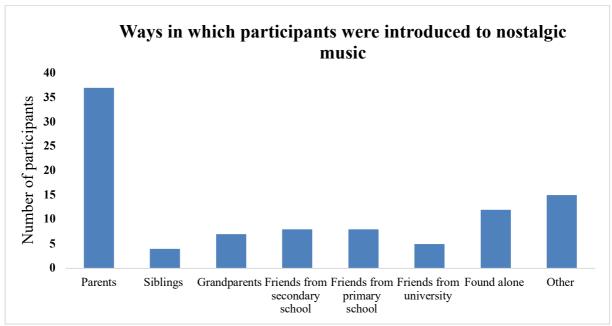


Figure 4. Bar plot of ways in which participants were first introduced to music they find nostalgic.

Results show a clear asymmetry, with 37 participants saying they find music introduced to them by their parents the most nostalgic. The 'other' section was the second most common response with 15 participants selecting this option. This section includes factors such as family, a significant other, friends, the radio, TV, and internet with regards to how participants came across music they found nostalgic. A frequent response in the open-text response under 'other' section was teachers and, more specifically, music teachers. This may be because, in combination with being introduced to this music in their formative years, usually at school, music lessons were the place where they were most exposed to music.

Related to how participants were introduced to nostalgic music, this study also investigated the types of music which make participants feel most nostalgic. These categories were grouped into 'music played at home growing up', 'music characteristic of a community', 'music that evokes a specific time or place', 'music related to an important life event', and 'other'. Below, Figure 5 displays the distribution of data amongst these categories.

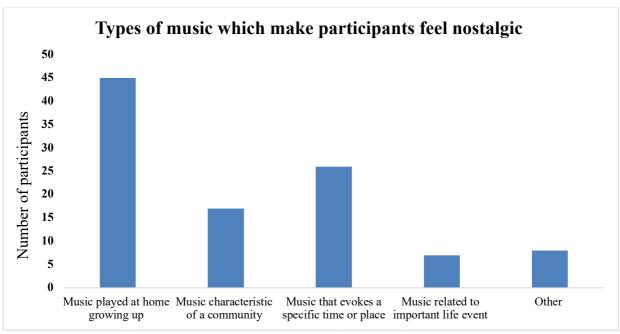


Figure 5. Distribution of data across multiple choice responses regarding types of music which make participants feel most nostalgic.

The data in Figure 5 shows a clear prominence in 'Music played to at home growing up', with 45 participants selecting this option. This perhaps relates to the significance of parent-introduced music with regards to heightened nostalgia. The second highest data peak is for 'Music that evokes a specific time or place', with 26 participants having selected this option. Responses to this option included examples of school, childhood, relationships, and holidays. The third most prominent option was 'Music characteristic of a community'. Example responses of this option included hymns at church or school and folk songs from the community then grew up in. Responses to 'Music related to an important life event' tended to be connected to romantic relationships, from weddings to first relationships. Lastly, a summary of the responses to the 'other' section comprises romantic interests, and TV/entertainment.

Other important factors found in the survey was that memories tended to be attached to the music participants found nostalgic, with 87.7% of the participants revealing that they had a specific memory connected to the music they chose. This suggests that memories have a strong connection to nostalgia and reveals that there are other important factors to discuss other than age. For the remaining 12.3% of participants who said they have no memory attached to their nostalgic music, music-evoked nostalgia is perhaps conceived more as a general mood rather than something attached to a specific memory.

The survey asked participants to describe memories induced by their nostalgic music in as much detail as they were comfortable with. Using Nvivo, a thematic analysis of their descriptions was conducted. Most memory descriptions could be categorised into 11 groups: childhood, driving, entertainment, family, friends, religious, significant other, solitude, study, teenage years, and work. Figure 6displays the distribution of memories within these categories.

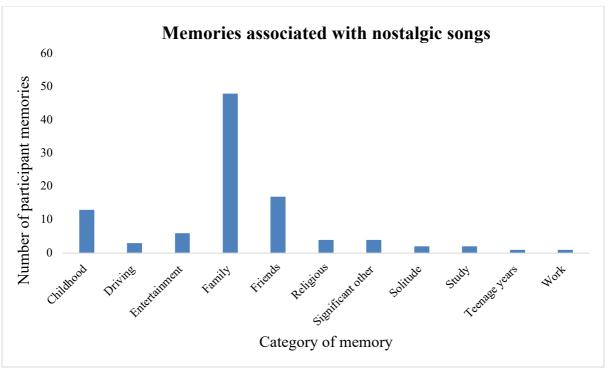


Figure 6. Amount of participant memories per memory category.

The three most significant memory categories were Family, Friends, and Childhood memories. 48 participants had memories associated with family, 17 with friends, and 13 to do with childhood. The above data appears to support the previous results which suggest that people find music most nostalgic when it is introduced to them by their parents during childhood years. The full thematic analysis and grouping of memories can be viewed in the Appendix.

4. DISCUSSION

We can draw various interesting conclusions from this research. First, there are two ages which seem to hold the most nostalgic music for participants. One of these is during the childhood years, and the other in the teenage years – the reminiscence bump (Rathbone et al.'s 2008). The data also shows that the reminiscence bump is of significance cross-generationally but is most pronounced amongst participants above the age of 25, with younger participants recalling songs from earlier in childhood, typically the first decade of life. The data also demonstrated that participants found the music which they associated with family and childhood memories the most nostalgic, highlighting that the childhood years are also of particular importance with regards to nostalgia.

Figure 2 shows data peaking in two main areas. The first peak shows that 21 participants said they found music introduced to them at the ages of 6-8 the most nostalgic, and the second demonstrates that 17 participants found music from their teenage years, in this case 12-14, the most nostalgic. We can thus extrapolate that these two age groups are the most nostalgia-inducing. A peak was expected to appear during the reminiscence bump ages which many categorise as the teenage years (Rathbone et. al, 2008). Instead, it came as a surprise that there was such a significant peak in the childhood years. Data here seems to suggest that the childhood years have a significant impact on nostalgia later in life, and indeed across all age groups. There are two factors which may have influenced this peak. One is that this survey was taken at Christmas, when participants perhaps had a heightened sense of childhood nostalgia. Another factor is likely the large number of participants ranging from the ages of 20-22. These participants seem to have more fondness and nostalgic feelings for their childhood years which may seem more distant to them than their recent teenage years.

Data found that there is a nostalgia divide between under 20s and over 20s. People in the 14–22-year-old age groups found their childhood years most nostalgic, whereas participants in the 25+ year old age group found their teenage years the most nostalgic. As discussed previously, childhood years seem to be the most logically nostalgic for the 14–22-year-olds as they have just come out of their teenage years, so childhood is more distant and perhaps produces more feelings of nostalgia and reminiscence than their recent teenage years. In terms of CNA[?] being

in the teenage years for older age groups, this follows the general trend of the teenage reminiscence bump which was most expected. As Rathbone et al.'s (2008) study on the reminiscence bump and self suggests, teenage years are some of the most formative years, therefore it is not surprising that the 25+ year olds find these years the most nostalgic (Rathbone et. al, 2008).

There was variation within participant responses and the correlation coefficient was weak ($R^2 = 0.1875$). I therefore separated participant responses between under 25s participants and over 25s in order to investigate how reliable this cross-generational difference in nostalgia age was. The results, as seen in figure 3, ultimately reasserted this cross-generational difference in nostalgia age, with the reminiscence bump for over 25s being 1.4X greater than for students under the age of 25.

Figure 4 goes beyond age and displays other stimuli at hand when discussing nostalgia. The data shows the different ways in which participants were introduced to music they find nostalgic. A considerable number of participants were introduced to their nostalgic music by their parents, suggesting that parents have an significant influence on participants from all age groups regarding music they find nostalgic. Jakubowski et al.'s (2020) study on the musical reminiscence bump in young adults reasserts this and similarly showed a spike in data with reference to young adults liking music from their parents' generation. Additionally, a majority of participants' nostalgic music falls within the popular music genre. This correlates with Davies et al.'s (2022) study which suggests that popular music is most conducive to nostalgia. This may be because participants hear it on a regular basis in everyday life (e.g., on the way to work, at the gym). This means that it is probably the music which is most connected to everyday memories. It is also the most popular and listened-to genre, as IFPI's 2018 Music Consumer Insight Report suggests (IFPI, 2018), recording 64% of 19,000 consumers from 18 different countries listen to the popular music genre.

Another section of this study looks at memory. 87.7% of participants said that they have a memory associated with music they found nostalgic, highlighting that the two are very likely linked. 'Music that was played at home growing up' was frequently chosen for the type of music participants found nostalgic. This correlates with the peaks in family and childhood memories amongst participants as seen in Figure 6.

Overall, the results slightly differs from the expected outcomes. Based on research and various existing studies, I initially expected the reminiscence bump to be of most significance amongst participants, however from the data collated it seems that childhood years are of most importance with regards to nostalgia. The reminiscence bump is most significant amongst participants of older age (25+), however my sample size was larger for participants aging 20-22 years old, for which childhood years seem to evoke more nostalgia. As discussed previously, this may be because 20–22-year-olds would have just left their teenage years and would thus have more fondness and nostalgic feelings for their more distant childhood memories.

The main limitation of this study is selection bias. The respondents were not a random sample of the population, and only reflect university students from Durham and family and friends contacts, which is only a limited demographic. Other populations may have different responses e.g. people who don't go to university or live in other parts of the world.

In terms of my survey, if I were to conduct it again, I would pilot the questions on a small sample number of people and refine it as needed before sending off the final questionnaire. Over one-third of respondents who started the survey didn't finish with complete or intelligible responses, suggesting that the survey could have been improved by piloting and refining prior to data collection. It may be that there were too many questions, or they were too difficult to answer, or perhaps even an IT issue for some users. I feel I could have prevented these issues by piloting the survey instrument, getting feedback from users and refining it, which may have resulted in more complete participant responses.

5. CONCLUSION

This study built on existing research regarding nostalgia and the reminiscence bump, exploring nostalgia across age groups, the significance of the reminiscence bump cross-generationally, and memory. Unlike previous studies, the results of my own research suggest that the reminiscence bump is only the most nostalgic for people above the ages of 25, whereas the childhood years seem to be most nostalgic for people below the age of 25. This differs from most existing literature which suggests that the reminiscence bump is always the most nostalgic. Nostalgia, therefore, seems to be complex and to evolve over the life course. Additionally, this study builds on previous psychological studies on the nature of nostalgia and reiterates that the childhood years, family memories, and

music introduced by parents seem to be consistently the most nostalgic. Further work is needed to confirm the relevance of these findings in larger, more culturally and socio-economically diverse populations in the future.

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APPENDIX

Full questionnaire:

Consent form
O I consent to taking part in this study
\rightarrow
How old are you?
Name two or three songs/pieces that you find nostalgic.
When did you first hear these pieces? How old were you?

Who introduced you to these pieces?
Grandparents
Parents
Siblings
Friends from primary school
Friends from secondary school
☐ Friends from university
Found it alone. If so, how and when?
Other
Are there any particular memories that you associate with these pieces?
○ yes
○ no
\rightarrow

What music makes you feel most nostalgic?
Music that was played to you at home growing up.
Music related to an important event in your life. If so, what?
Music characteristic of a community that's important to you. E.g. sporting community, church, school, social group. If so, what?
Music that evokes a specific time or place in your life. If so, what?
Other
We thank you for your time spent taking this survey. Your response has been recorded.

Thematic analysis of memories:

CHILDHOOD

Happy memories

Au pair singing
Childhood happiness and innocence
Doing gymnastics under a big lime tree in my garden
Happy childhood memories

Home

Childhood home Childhood home in Hong Kong Country of origin Holiday home in France

Music education

Being a chorister at St. John's Cambridge Learning the piano

School

Primary school Primary school leavers assembly School orchestra Christmas concert

DRIVING

Driving at night
Driving over the hills in Northumberland
Listening to music in the car

ENTERTAINMENT

Films

Barbie swan
Finding Nemo
Les choristes
Pride and prejudice
The Sound of music

Ice skating

Ice skating performance at the Olympics

Family

Christmas

Christmas songs with celebrations at home Reminds me of coming home for Christmas and being together as a family

Family car rides

Car road trips with family

Dad in the car

Driving with mother

Family car trips

Singing with dad in the car

Singing with my mother in the car

Father

Dad carrying me to school

Dad playing the guitar and singing

Father telling stories

Playing a game with my father

Talking with my dad

Family film nights

Dad singing his favourite songs from the Sense and sensibility

Films with family

Sitting in the study watching west side story

Watching films with family

Watching films with family

Watching films with family

Happy memories

Beautiful family memories

Listening to the radio and cassette player at my grandfather's house

Memories with family and parents

Memories with father

Painting and reading near my parents whilst listening to music

Playing the guitar and singing to my parents

Holidays

Being with my large multi-generational family in Ireland

Family memories in another country

Holiday with brother

Relaxing times in rural Norfolk with my family

South of France

Home

Family home in Poland

Lullabies

Father singing a lullaby

Father singing a lullaby

Mother and grandmother singing a lullaby

Mother

Dancing and listening to music with my mother

Going to bed whilst mum played the piano

Listen to music with mother in the car

Mother cleaning in the living room

Talking to my mother

Roast

Making roast with my father

Roast lunch cooking

Siblings

Being introduced to music by my elder sibling

Brother playing the guitar

Listening to music with my sister

Older sister singing

Playing video games with brother

Singing in front of guests with siblings

Watching film with little sister

FRIENDS

Music

Going to a concert with a friend Karaoke with friends
Singing with friends

Parties and fun

Dancing at a summer camp Fun with teenage friends

Parties in friend's houses, and the excitement of gramophone recordings

Performing in a dance competition with friends

Spending time with friends

School

Arguing with friends in primary school Holiday with school friends
Memories of school friends
School friend
Secondary school friends
Singing with boarding school friends
Singing with friends in the school bus

University

Long conversations with university friends Summer memories with friends from university

RELIGIOUS

Church with family
Feeling at peace after a period of stress and anxiety
Gregorian chant
Seeing a sunset and feeling content and at peace

SIGNIFICANT OTHER

Becoming a parent for the first time First romance First years of marriage University walks with my boyfriend

SOLITUDE

Times of solitude and listening to and finding lots of different music Watching a sunset alone

STUDY

Finishing my university coursework Working in higher education

TEENAGE YEARS

Awkward moments of adolescence

WORK

Working as a DJ