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THE IMPORTANCE OF MUSIC TO SENIORS

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To determine the significance of music in the lives of senior individuals, a short questionnaire was added to the protocol of the 2nd phase of the Canadian Study of Health and Aging (CSHA2). Over 300 participants (mean age 78.3 years) from Prince Edward Island ($N = 211$) and Nova Scotia ($N = 109$) completed the questionnaire. Their ratings of the importance of music produced a modal response of the highest rating category. This judged level of importance of music was independent of age and mental status, as measured by the Modified Mini-Mental State Exam (3MS), but correlated with past and current involvement in music. Favorite music covered a broad range of styles, with period of popularity of the music weighted toward earlier rather than later decades of life. The same questionnaire was administered 2.5 years later to 93 CSHA2 seniors, including 78 individuals from the original sample. These results confirmed the previous observations. The importance of music to seniors, as shown here, raises questions about the optimum level of access to music by seniors. Increasing access to relevant music experiences, for example, through public broadcasting, or accessibility to choirs, instruments, training, and music therapists, may help maintain and augment quality of life in later years.

The present paper draws attention to the importance of music in the lives of elderly listeners. The listening habits and consumer choices of adolescents and young adults indicate that music is important in the lives of young people. The significance of music to older adults, however, is less clear. Cross (1998) has suggested that music is one of the most biologically significant activities in human life. The role of music in the lives of young people supports this view. We ask here whether the significance of music declines in senior years or whether it remains stable.

Arguments can be raised both for and against the notion that the importance of music continues into and throughout senior years. On the one hand, from the cognitive psychology literature, the basic sensitivity to musical variables remains intact. Older listeners retain the ability to identify transposed melodic sequences (Cohen & Trehub, 1988; Halpern, Bartlett, & Dowling, 1995) and to recognize melodies that are speeded or slowed (Andrews, Dowling, Bartlett & Halpern, 1998). Older listeners are also susceptible to mood induction by music (Fox, Knight, & Zelinski, 1998).

On the other hand, in spite of the evidence of the general ability to respond to music in a manner that is comparable to that of younger adults, test performance in experiments with elderly people often shows decline especially when memory is involved and the musical patterns in question are unfamiliar (e.g., Bartlett, Halpern, & Dowling, 1995; Clyburn & Cohen, 1996; Cohen

& Trehub, 1988; Halpern, et al., 1995). Moreover, reduced sensitivity to hearing high frequencies typically accompanies aging. Although the transmission of musical structure does not rely on high frequency, some of the subtler aspects of music such as instrument tone quality are affected. Such deficits might impede the enjoyment of music in senior years.

A continuity theory of aging suggests that successful aging entails the continuation of activities of early life. Atchley (1989, 1993) argues that older adults make deliberate choices to retain their past. Wise, Hartmann, and Fisher (1992) noted that in a retirement community, those who had engaged in choral singing made up the majority of current participants in a choir. This continuation of an activity on the part of those who had belonged to choirs in the past supported the notion that elderly persons tend to maintain consistency in their activities. Listening to or playing music may place fewer demands on an aging body than the demands of other past enjoyable activities of one's youth, such as sports, camping, even dining out on spicy food. Therefore, the elderly person may better maintain continuity through musical activities than through other means, though this may entail overcoming or adapting to mild deficits in hearing and reduced cognitive abilities that potentially diminish sensitivity to and enjoyment of music.

To determine the significance of music in the lives of older individuals, the present research took advantage of a small portion of the participants in the 2nd longitudinal phase of the Canadian Study on Health and Aging (CSHA2). The CSHA is an ongoing epidemiological study of dementia, focusing on prevalence, risk factors, and patterns of caregiving of the elderly in the 10 Canadian provinces (CSHA Working Group, 1994). A purpose of CSHA2 was also to reveal factors that contribute to successful aging. The sample had been stratified to provide a greater proportion of seniors in the oldest age categories, an age group that is rarely tested in such numbers. The 2nd phase included over 8,000 of the original 10,000 from the first phase, five years earlier. The sample available to the present authors came from the two smaller provinces, Prince Edward Island and Nova Scotia.

Because all CSHA2 participants received a lengthy protocol, often lasting two hours, any additional questionnaire must necessarily be brief. Questions about music interest were developed to obtain basic information about the importance of music in the lives of seniors and the extent of their pursuit of musical activities. In addition to addressing the general question of the importance of music to seniors, the study aimed to reveal factors that contribute to this importance. Past experience and current involvement with choirs or playing musical instruments obviously could play a role. Moreover, because music listening entails complex cognitive processes in structuring and retaining information, it is reasonable to ask if the judged importance of music depends on general cognitive status. A connection between music activities and mental status would raise various questions concerning the role of music in maintaining mental status in seniors or the need for high cognitive function in order to enjoy music.

Further understanding of the importance of music could be determined from data on the kind of music regarded by seniors as most favorable or familiar. Several studies have revealed a preference for music from early periods in life (e.g., Clyburn & Cohen, 1996; Gibbons, 1977). This pattern also has been revealed in data from the United States General Social Survey (Smith, 1994). There are no comparable Canadian survey data. A novel way to address this question is to investigate what musical pieces are most accessible mentally to seniors. Across their lifetime, people are exposed to hundreds of different musical pieces. Each year, new compositions in a popular genre are introduced. The current time is no different in this respect from earlier eras. Prior generations lacked the rapid electronics and transmission typical of today and even radio was not common until the 1940s. Nevertheless, the new music of earlier decades was transmitted through sheet music, vaudeville, theatre, movies, concerts, and gramophones. Years ago, people more frequently made their own entertainment, much of which entailed music. It is unlikely that all the musical experiences are stored, but just how much is retained? Perhaps early musical memories decay through disuse and through interference from newly established traces representing more recent pieces. Alternatively, the plasticity of the brain for acquiring musical information may prevail only early in life and new material is not as readily encoded in later life. In the present study, to obtain knowledge about the nature of the elderly person's music lexicon, the person was asked to name a favorite song. It was presumed that the collection of individual selections of music would represent the class or classes of songs most prominent in the minds of senior individuals.

Method

Subjects

As summarized in Table 1, there were 320 subjects in total with a mean age of 78.3 years. This mean age resulted from previously over-sampling from the older age groups for CSHA1. The province of Prince Edward Island (P.E.I.) provided 65 % of the participants, the remainder being from Nova Scotia. Ethical approvals for conducting the study were obtained after the commencement of data collection for the main CSHA2. This delay contributed to fewer participants in the music interest questionnaire than in the main CSHA2. In particular, Nova Scotia did not join the music interest survey portion until far into their CSHA2 testing.

Procedure

The brief questionnaire contained five basic questions (see the Appendix) addressing (a) listening frequency, (b) participation in choirs, (c) playing a musical instrument, (d) naming a favorite song and its date of initial popularity, and (e) the judged importance of music. The questionnaire was added to the end of the standard protocol and was presented to a portion of the participants in CSHA2 in P. E. I. and in Nova Scotia. The majority of music questionnaires were administered by personal interview. There were several inter

Table 1

Age, Mental Score (3MS) and Judged Importance of Music for the Elderly Sample Divided into Young-Old and Old-Old

	Young-Old N = 160	Old-Old N = 158	Total N = 318
Age Range (Years)	69 - 77	78 - 100	69 - 100
Mean Age (SD)	73.4 (2.25)	83.2 (4.0)	78.3 (5.90)
Mean Mental Score (SD)	89.8 (7.46)	83.9 (11.54)	86.9 (10.13)
Judged Importance of Music - Mode	5	5	5
Judged Importance of Music - Mean (SD)	3.74 (1.39)	3.82 (1.38)	3.78 (1.38)

viewers in each province. In addition to the personal interviews, approximately 20% of the P.E.I. sample received the music questionnaire by telephone, in order to test some of those subjects who had received the main protocol before the music add-on had been approved.

The results from the CSHA2 standard protocol available to the researchers included the outcome of the Modified Mini-Mental State Exam (3MS, Teng & Chui, 1987) and the birth date for each subject. Extensive archival research determined the original and revival dates of songs named (e.g., using sources such as Agay, 1975; Benjamin & Rosenblatt, 1993; Bloom, 1995a and 1995b; Brunnings, 1981; Diehl, 1966; Gammond, 1991; Greene, 1995; Havlice, 1975; Pollock, 1979). For popular songs named, it was possible to calculate the approximate age of the participant for first exposure to the song because the year of original popularity was known through the archival search.

Results and Discussion

Table 2 shows the results of the survey regarding past and current music involvement. The majority of seniors were daily listeners and over 90% listened at least twice a week. Only a minority were actively involved with music. The reduced numbers singing in a choir (from 39% in the past to 6% now) was evidence of a decline in active involvement.

In spite of the low percentage of those actively involved with music, explicit judgment of the personal importance of music was very high. On a scale of importance from 0 (not at all) to 5 (very), the modal value was the highest category of importance, that is, 43% of participants gave the rating of 5. The mean judged importance of music was 3.78 (see Table 1 and Figure 1)

and the means for the younger and older half of the group did not differ significantly.

Table 2

Percentage of Sample Engaged in Music Activities, Past and Present

Music Activity	Past	Present
Play a musical instrument	33.6%	16.0%
Sing in a choir	39.3%	6.0%
Music lessons	28.3%	-
Listen to music daily	-	70.0%

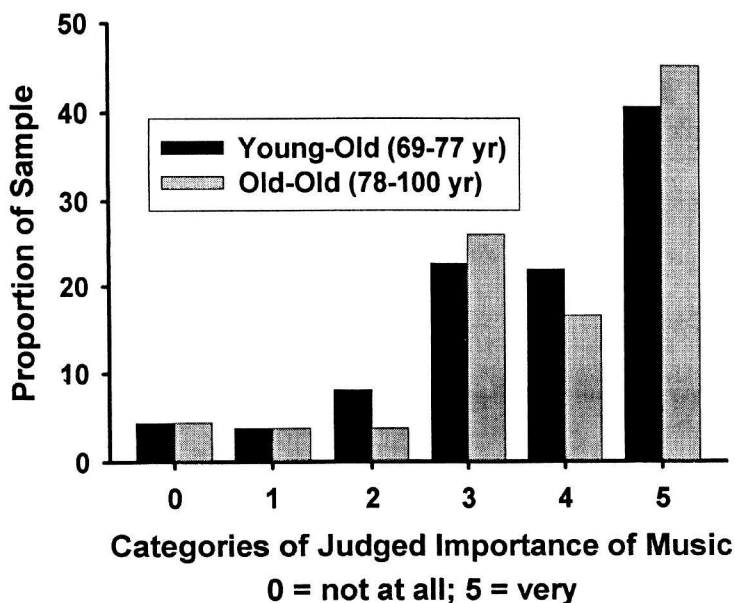


Figure 1. Percentage of elderly (young-old and old-old shown separately) to choose each category of the judged importance of music.

The mean mental screening score (3MS) did not differ significantly between the two provinces. Mental status did however decline significantly with age (Pearson $r = -.37$) but not with judged importance of music ($r = .00$). In other words, judged importance of music was not significantly related to or dependent on mental state. Judged importance of music, however, was significantly correlated with listening frequency (Spearman $r = .40$) and other past and present measures of musical involvement as seen in Table 3.

Table 3

Significant Correlations (Spearman) of Judged Importance of Music with Mental Status Scores and with Past and Present Music Activities

Variable correlated with Judged Importance of Music	Correlation
Mental Status Score (3MS)	.00
Listening Frequency	.40*
Number of years playing an instrument	.31*
Number of years singing in a choir	.28*
Number of years of music lessons	.24*
Currently playing a musical instrument	.23*
Currently singing in a choir	.15*

* $p < .01$

Although it was relatively straightforward to *ask* the participant to name a favorite song, it was not necessarily straightforward for participants to choose and name one song. In fact only slightly more than half of the participants (58%) named a favorite song. The responses of popular music provided valuable data but presented several challenges for analysis. For example, in order to determine the age at which the participant was first exposed to his or her favorite song, it was necessary to determine from archival information the primary period of popularity of the song. Sometimes these dates were obvious. For example, the song *Redwing* originated in 1907 (lyrics, Chattaway; music, Mills) and was never revived. Other popular songs, however, were revived from time to time, and it is not clear which date was meant¹. A clue to the correct date was provided by the subject's own assessment of the decade of popularity. Other problems arose when a song was named, but the date for this song could not be found in any available source. Some songs known to the respondent, for one reason or another, might not have had a name.

In spite of these difficulties, it was possible to find the dates of popularity for the majority of the popular songs named. (Approximately half the songs named fell into the popular category, whereas others were religious, traditional, or in a few cases, classical².) The mean age of participants on first exposure to their named song was 34.7 years (33.7 and 35.7 years for younger and older seniors, respectively). Rubin, Rahhal, and Poon (1998) have noted that the period from 10 to 30 years of age produces the most autobiographical, vivid, and important memories. Included in their discussion is memory for popular music. While we also found this tendency for seniors to name songs popular in their early adulthood, some participants chose songs from later or earlier than the period identified by Rubin et al. (1998)³.

Follow-up Study

In order to validate the results of the above study, approximately 2.5 years later, a second questionnaire was administered by phone to a subsample of the original P.E.I. CSHA2 participants. The questionnaire was identical to the first with the exception of the question about a favorite song. In the first questionnaire, subjects frequently claimed that they could not choose one favorite. Therefore, the question was revised to initially ask the participant to name the first song that came to mind. If no song was named, then the interviewer asked for a favorite song.

Participants who had been in the original CSHA2 were contacted by phone. The calls were made over a period of about a month by two interviewers, one of whom had previously interviewed in CSHA2, and the other had previous experience in testing seniors. There were 93 participants and of these participants, 78 had received the original questionnaire. In general the results of the 15 new subjects (mean age 78.2 years) were consistent with the data of the 78 old subjects (mean age 80.6 years), whose data corroborated the earlier findings.

Looking first at the sample of 78 subjects who received the music questionnaire for the second time, the most frequent responses for judged importance of music were the two highest values (65.6 % respondents), 4 = 32.8 % and 5 = 32.8%. The mean importance was almost identical (3.75) to that of their group mean (3.74) obtained 2.5 years earlier. In the first questionnaire, all 78 subjects responded to this question, but in the second questionnaire, 11 subjects did not respond, possibly due to disinterest in a second questionnaire or the reduced impact of the telephone as compared to personal interview. Adding the 15 new subjects (one of whom did not respond to this question) raised this mean to 3.80 ($N = 81$). For the two judgments of importance of music by the 67 subjects who had twice rated importance of music at an approximately 2.5 year interval, a significant Pearson correlation of .62 was obtained ($p < .01$; also, Spearman = .60, $p < .01$).

Also of interest is the similarity in the date and style of judged songs selected. The wording of this question had been changed somewhat as described above. Of the 78 repeat subjects, 47 had named a favorite song in the

first questionnaire and of these subjects, 44 named the first song that came to mind in the second questionnaire. There were 7 subjects who had not named a first song to come to mind in the second questionnaire but who named a favorite song in the first questionnaire. There were 8 subjects who had not named a song in the first questionnaire who named a first song to come to mind in the second questionnaire. One such song named was *Oh Canada*, the national anthem. Thus this pattern of failure to respond was consistent with the first questionnaire. Of those who named a song on both questionnaires, 6.4% ($N = 5$) named the same song.

Comparison data also were obtained from university students who were given the questionnaire in their first year psychology or English classes. There were 73 subjects of mean age 18.8 years (range 18 - 22). Their mean rating of the importance of music was slightly higher than that of the elderly, at 4.2. Of this younger group, 96% reported listening to music daily as compared to 70% of the seniors in the first study. An analysis of variance was carried out on the mean judged importance of music, comparing the university students and the young-old and old-old groups (first questionnaire). The omnibus F was significant, $F(2,416) = 7.2, p < .05$. Post hoc Tukey HSD tests revealed no difference between the two older age groups, but a significant difference was found between the university students and the young-old group ($p < .05$). The difference between the university students and the old-old group closely approached a conventional level of significance ($p < .053$).

General Discussion

Several conclusions follow from this study. First, music is important to most seniors. Whereas no measures of quality of life were specifically obtained in this survey, we may infer that importance reflects the concept of "contributes to quality of life." Secondly, music is important in the lives of seniors regardless of their cognitive status. Similarly, it can be inferred that music can contribute to the quality of life regardless of mental capacity. This finding provides support for integrating music into programming for cognitively impaired persons. Thirdly, music heard early in life continues to have significance later in life (this of course does not rule out the acquisition of musical information well into senior years). Demographic and cohort variables may account for some of these results. Nevertheless, absence of significant differences between the two diverse Canadian provinces examined (one a remote rural island, the other, a more urban environment) and between young-old and old-old suggests the generalization of these findings to other communities.

The most striking information from this study is the consistently high level of importance of music to the seniors. Within the group of seniors, whose age range spanned 30 years, musical importance was independent of age, geographical region (i.e., province), and level of mental competence. Not surprisingly, musical importance was correlated with various indexes of musical involvement such as daily listening, past and present playing of musical in-

struments, and singing in a choir; however, all correlations except daily listening were less than .35.

The judgements of the favorite song or first song that comes to mind provides insight into the process of acquisition of music over the lifespan and gives information about what kind of music is important to seniors. Evidence that the majority of the seniors' accessible songs were from earlier decades of life suggests the significance of this early period for acquisition of musical knowledge. Memory traces of music acquired early in life retain accessibility such that they come to mind first when asked to name a favorite song. This occurs in spite of current regular exposure to other music (although we do not have accurate data on styles of music heard on a daily basis by our sample).

The data are consistent with a previously proposed cognitive framework for the acquisition of musical grammar and consequent effects on musical preference (Clyburn & Cohen, 1996; Cohen, 2000; Cohen et al., 1995; Cohen & Bailey, 1998). The framework (shown in Figure 2) focuses on the plasticity of the brain in early years, during which music grammar and style preference are acquired. This framework is also consistent with the work of Halpern, Kwak, Bartlett and Dowling (1996) that shows that older listeners exploit the same internalized tonal structure as do young adults. Such tonal structure is basic to most popular music across the decades and this tonal framework has shown an early developmental course (Krumhansl & Keil, 1982). Nevertheless, in the present study, a minority of participants named recent favorite songs, indicating some plasticity into senior years with respect to acquisition of new musical information. However, no participant older than 75 years of age chose a song from his or her current decade.

Ryff (1995) has outlined six core dimensions of well-being: self-acceptance, purpose in life, environmental mastery, positive relationships, autonomy and personal growth. Because of the high significance attributed to music by elderly listeners, a significance that almost mirrors that of young people for whom music is so obviously important, future research might well be directed to determining the dimensions of well-being to which music contributes. It is possible that it contributes to all of them [see also the article by Coffman, this Volume].

The mean importance of music was stable across age within the senior population (young-old to old-old) however, the difference in the means for young university students and the seniors, though small, was statistically significant, at least for the young-old group. As roughly 60 years separated the mean ages of the student and senior groups the difference of 0.4 on a 0 - 5 (or 6-point rating scale, roughly 6.7%) seems somewhat negligible. Further cross-sectional research of this type, including middle-aged adults, would help to determine the age at which importance of music may begin to decline slightly. Bailey and Cohen (2002) have proposed two critical periods for music grammar acquisition, one coinciding with the critical period for language (up to 12 years of age) and the other coinciding with the time of greatest sociobiological significance of music (early adulthood). After this point the signifi-

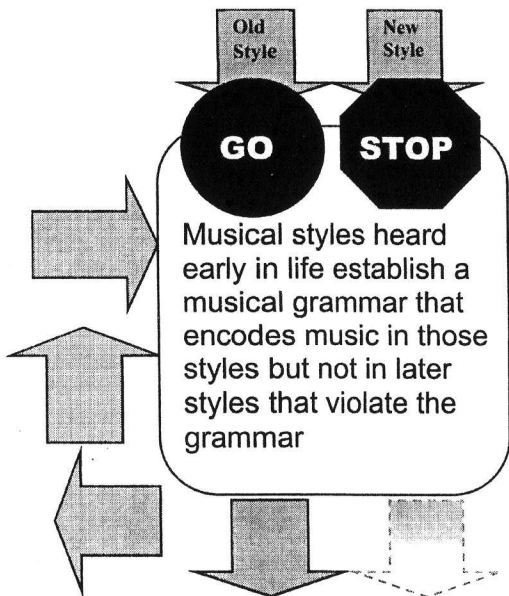


Figure 2. Plasticity model of the acquisition of musical grammar.

cance of music might drop. Perhaps this drop in significance of music for older listeners arises because of less opportunity to listen to music that they value, for example, from public broadcasting (see also Tolhurst, Hollien, & Leeper, 1984). This suggestion is consistent with Atchley's continuity theory of social aging where the significance of music is retained throughout life because listening to music remains one of the few leisure activities that can continue into senior years, providing hearing remains relatively intact. However, added value of this continuity arises when the music is that enjoyed earlier in life.

The importance of music in the lives of seniors as indicated by the above research translates into three considerations for those charged with the welfare of the senior population. First, it can be argued that access to musical activities become a priority for such government agencies. This movement could take the form of (a) encouraging seniors to join or form choirs or orchestras, or take lessons on musical instruments; (b) providing incentives to leaders of such musical groups and educational institutions to welcome seniors; (c) providing incentives to leaders of public broadcasting and Internet resources to increase accessibility to music of the earlier decades and also to music training; and (d) furnishing suitable resources for music in public librar-

ies, senior and wellness centers, programs for the cognitively impaired, nursing homes and palliative care settings.

The second issue is somewhat more challenging and has to do with hearing handicaps that may impede musical enjoyment in later life. It has been argued above that for the majority, music is one of the few activities that offers lifelong enjoyment and that the continuation of this pleasurable activity throughout life may add to general wellbeing. Therefore, an important focus of government could be ensuring access to and proper use of hearing aids to enable the continued enjoyment of music for as long as possible. Research on hearing aids that do not distort music also should be encouraged. Special consideration also should be given to the minority of elderly individuals who become profoundly deaf with age. For them, music cannot be important in a positive way (unless they are endowed with strong musical imagery or even absolute pitch). The absence of music may impact negatively by denying the opportunity to continue this pleasurable activity into old age. Recognition of the significance of music in the lives of the hearing elderly further might encourage research directed toward simulating musical experience for those who cannot hear.

Finally, there is a role for education in the fields of gerontology, developmental psychology, music education, music therapy, and music psychology to emphasize the importance of music in the lives of seniors.

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Footnotes

¹For example, the song *When You and I Were Young Maggie*, was written in 1866, revived by Van and Schenek in 1923, popularized by Frank Stanley and Corrine Morgan and revived again in 1951 by Bing and Gary Crosby. It was also included in the 1943 Musical Film, *Swing Time Johnny*.

²The mean mental score (91.8) of this group of 18 who chose classical music was in the range of the seniors who provided both a name and a date for a popular song. Participants who provided only the name of song had a significantly lower mean mental score. This discussion is outside the scope of the present article.

³Mental status and dates of first hearing favorite songs were not significantly correlated, a relation that might be expected if declining mental status was associated with preservation of early memories and loss of later memories as characterizes some forms of dementia.

Appendix

Survey

1. How often do you listen to music?

< once/month _____ once/month _____ once or twice/week _____ daily _____

2. Do you sing in a choir now? _____ yes _____ no

If no, did you used to? _____ yes _____ no

2a. For how many years did you sing in a choir?

0 _____ 1 - 3 _____ 4 - 8 _____ 9 or more _____

3. Do you play a musical instrument? _____ yes _____ no

If no, did you used to? _____ yes _____ no

3a. For how many years did you play an instrument?

0 _____ 1 - 3 _____ 4 - 8 _____ 9 or more _____

3b. For how many years, if any, did you take music lessons?

0 _____ 1 - 3 _____ 4 - 8 _____ 9 or more _____

4. What is one of your favorite songs? (If you don't know... what is the first song that comes to mind?)

4a. Do you recall about when it was popular?

1910 _____ 1920 _____ 1930 _____ 1940 _____ 1950 _____ 1960 _____ 1970 _____ 1980 _____ 1990 _____

Or Traditional _____ Religious _____ Classical _____

5. How important is music to you?

0 _____ 1 _____ 2 _____ 3 _____ 4 _____ 5 _____
not at all _____ very