DEVELOPMENT OF LIKING FOR FAMILIAR AND UNFAMILIAR MELODIES

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This study investigates the effects of age on musical likes and dislikes: the developmental aspect of the aesthetic response to music has received remarkably little attention, despite its obvious importance in music education. Within the field of experimental aesthetics, the "optimal complexity' model has been found extremely useful in the prediction of likes and dislikes. It predicts that liking should be low for musical stimuli with high and low levels of complexity, and at its maximum for those of intermediate complexity. The relationship between liking and complexity can thus be described as an inverted-U-shaped curve, for which there is a good deal of empirical evidence (e.g., Vitz, 1966; McMullen, 1974; Heyduk, 1975; Steck and Machotka, 1975; Walker, 1980). Sluckin, Hargreaves and Colman (1982, 1983) proposed a version of the inverted-U function which has stimulus familiarity as the abscissa: we apply this model in the present study by making the assumption that children become increasingly familiar with common musical stimuli as they get older through simple exposure. Age is thus taken as representing the abscissa of the hypothesized inverted-U curve. Such an operationalization of the familiarity variable was employed by Colman, Walley and Sluckin (1975) in their experiments on words and nonwords, but it has not as yet been applied to musical stimuli.

We test this model by comparing the liking ratings of subjects at six widely-spaced age levels for four types of melody of varying familiarity: two of these were "real-life" melodies drawn from the musical repertoire, and the other two were experimentally-derived "statistical approximations to music" (Davies, 1978), whose informational redundancy can be precisely manipulated. The two types of real-life melody were very common nursery rhymes and carols, and little-known folk song melodies: "near" and "far" statistical approximations to music were the other two stimulus types.

Our hypothesis is that an inverted-U curve should form the most general description of the changes that occur with age in liking for melodies. We predict that the very common real-life melodies, i.e. the nursery rhymes and carols, should become increasingly familiar with age to the subjects in this study: and that an inverted-U-shaped function should therefore describe the progressive differences between the liking ratings of the six age groups. The uncommon real-life melodies (the folk tunes) will be unfamiliar to all our subjects, irrespective of age: very few subjects will have heard any one of them through normal cultural exposure. In their case, we predict that subjects will respond to the subjective type of a melody rather than to the specific melody itself: since the folk sol melodies are of a culturally recognizable type, we predict a general rise in liking with age, which may reach an inverted-U peak. If it does, the peak should be developmentally later than that for the common real-life melodies. None of the statistical approximations to music will have been heard before by any of the subjects, and they are not of any culturally-recognizable type: there is therefore no reason to predict that liking should increase with age according to the inverted-U-curve. A tentative prediction is that the strangeness of these stimuli may mean that liking for them should decrease with age, and that this effect may be greater for the "far" than for the "near" approximations to music.

Method

Subject

There were 16 subjects in each of six groups aged 4-5 years, 6-7 years, 8-9 years, 10-11 years, 143-14 years, and over 18 years ("adults"), with equal numbers of males and females at each age level. The 4-5 year-olds and the 6-7 year-olds were tested individually, the adults singly or in small groups, and all other subjects in groups of eight. All of the school- aged subjects came from primary or secondary schools serving the same part of Leicester, U.K., and they were tested in school. The adult subjects were mostly student and staff volunteers from Leicester University. Subjects were not selected with respect to musical training and experience.

Musical Material

The tone sequences, five in each of four categories, were single-note lines of approximately five seconds duration that were played on a synthesizer and recorded on amaster tape. The five familiar melodies were the opening bars of very common nursery rhymes and carols. The five unfamiliar melodies were the opening bars of five little-known items from The Penguin Book of English Folk Songs (Vaughan Williams and Lloyd, 1959). All ten of these real-life melodies were in the major mode. The five near approximations to music were ten-note sequences of seven notes' restraint (by restraint, we mean sequences in which each note was selected on the basis of the previous seven: see Davies, 1969), and the five far approximations to music were ten-note sequences of one note's restraint. The sequences were tape recorded in two random orders for presentation to the subjects.

Procedure

All subjects in the 7-8, 10-11, 13-14 year-old and adult age groups were presented with twenty five-point rating scales, on a single sheet, ranging from "dislike", through "quite dislike", "Neither like nor dislike" and "quite like" to "like", and asked to rate one sequence on each scale. Subjects in the 4-5 and 6-7 year-old groups made their ratings by pointing to one of five outline faces in which the representation of the mouth conveyed the five levels of liking, and these choices were recorded by the experimenter. The two "dislike" points were conveyed by differing degrees of an inverted-U shaped mouth, the two "like" points by equivalent U-shaped mouths, and the neutral mid-point by a straight horizontal line mouth. Each child received a detailed individual explanation of the meaning of the five points, and the experimenter did not proceed until satisfied that the meaning was fully understood.

Analysis of Data and Results

Liking ratings were converted to numerical scores of 0 ("dislike") to 4 ("like"). For each subject, four mean liking ratings were calculated, one for each type of tone sequence. A two-way analysis of variance was performed which had one independent factor with six levels (age), and one repeated measures factor with four levels (type of tone sequence). Cell means are shown graphically in Figure 1.

FIGURE 1

Mean Liking Rating for each Type of Stimulus Sequence
at Each of Six Age Levels
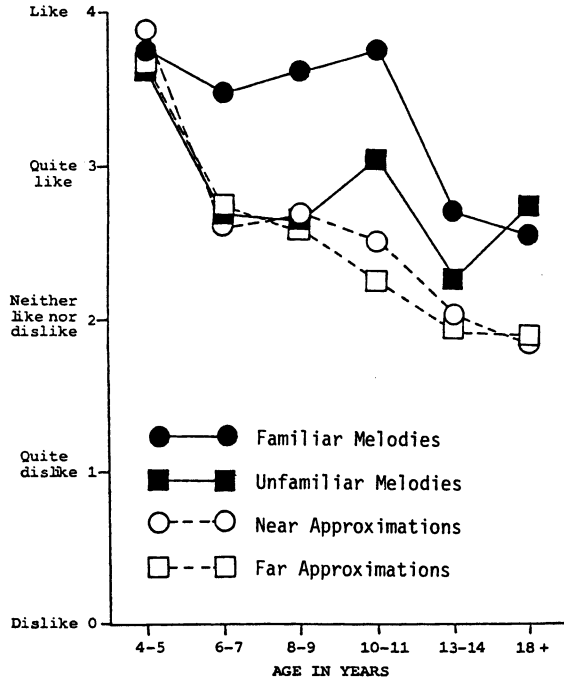
Both main effects were statistically significant; for age F(5,90) = 14.54, p < 0.001, and for type of tone sequence F(3,270) = 48.59, p< 0.001. The interaction was also significant with F(15,270) = 3.42, p<0.001.

Discussion

   In this study the independent variable (familiarity) could be said to vary in two ways. First, it was argued that with increasing age and experience, familiarity with culturally-based music would increase, so that older sub-jects would be more familiar with the real-life musical stimuli than would younger subjects. Second, familiarity is partly dependent on stimulus characteristics: the familiar melodies should be more easily recognizable than the unfamiliar melodies, which in turn should be more subjectively familiar than the statistical approximations to music. The significant main effect for stimulus type shows that the familiar melodies were best liked, followed by the unfamiliar melodies, near approximations, and far approxima-

tions, in that order. The other significant main effect shows that there was
an overall decline in liking for the stimuli with age.

    Before we examine the interaction more closely, it should be pointed out
that the data from the 4-5 year-old subjects are somewhat suspect: most
children in this group seemed to have a very positive attitude towards the
experimental situations as a whole (i.e., being taken out of classes for
individual testing, being in an unfamiliar room with distracting and attrac-
tive pictures on the walls), and it was apparent that they favored one
response consistently (usually "like"), irrespective of changes in the
stimuli. They often responded before they had heard a complete sequence, and
tended to become bored rather quickly. In other words, their high ratings
were not a simple function of the sequences they listened to.

    The results obtained for real-life familiar and unfamiliar melodies were
consistent with an inverted-U curve which peaks later for the latter than for
the former. Figure 1 shows that there were no clear differences between the
four youngest groups' ratings of the familiar melodies, and that there was a
decline in ratings from the 10-11 year-old to the 13-14 year-old group: the
ratings of the latter group were close to those of the adults. This pattern
of results could be thought of as representing the latter half of an inverted
U for which a peak occurs between the ages of 6 and 10, assuming that the
high ratings given by the 4-5 year-olds were unreliable. For the unfamiliar
melodies, the 10-11 year-olds gave higher ratings than the 13-14 year-olds,
with those of all other age groups except the preschoolers falling in
between. This pattern of results is consistent with an inverted-U curve
which peaks at around the age of 10, i.e., somewhat later than the peak
occurring between 6 and 10 years for familiar melodies. Liking for both near
and far statistical approximations to music declined steadily with increasing
age.

    Further light can be shed on these findings by considering the differences
between ratings given to the different types of sequence within age
groups. The 4-5 year-old subjects do not appear to distinguish in their
liking ratings either between familiar and unfamiliar melodies, or between
"real" music and statistical approximations to music. This contrasts with
the 6-7 year-olds, who rate familiar melodies as preferable to all other
types of sequence. They do not, however, appear to make a distinction in
liking between unfamiliar melodies and statistical approximations of music,
and the same pattern seems to hold for the 8-9 year- olds. For the 10-11
year-olds, familiar melodies are still the best liked, but by this age
subjects distinguish in their ratings between unfamiliar melodies and
statistical approximations to music, preferring the former to the latter.
The 13-14 year-olds appear to prefer the real-life melodies to the statisti-
cal approximations to music, and this tendency is more pronounced in the
adult group. These findings support the suggestion that the decrease in
liking with age for statistical approximations to music comes about because
it is only with increasing age that subjects realize that statistical music
differs from unfamiliar real music; it is increasingly perceived as strange,
and perhaps unmusical.

    In summary, liking ratings for familiar and unfamiliar real-life melodies
were obtained which were consistent with the hypothesized inverted-U
relationship between liking and familiarity, with age representing the
latter. The results were consistent with the hypothesis that the peak of the
inverted U would occur at a later age for unfamiliar than for familiar
melodies. The pattern of ratings obtained for the statistical approximations
to music was also consistent with the inverted-U hypothesis: liking was an
inverse function of age for these stimuli, and it was argued that this was
because the extent to which they appeared unfamiliar when compared with the
other melodies increased with age. No difference was found between ratings

given to the two types of statistical approximation to music. In general terms, these results provide further support for the "optimum complexity" model of musical preference. Further research might profitably investigate the nature of the age function in more detail using more rigorous procedures such as curve-fitting, and might also pursue the relationship between age and familiarity with common stimuli.

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