JRME 1981, VOLUME 29, NUMBER 2, PAGES 143-156

The purpose of this study was to measure the effects of style, tempo, and performing medium on fifth-rade students' expressed music listening preference. A listening test was administered to 107 students in four classes in central Michigan. Test reliability was evaluated in terms of common factor concentration and stability across time, and behavior observation was used to help interpret results. A preference hierarchy emerged in which the popular styles were most favored and correlation analysis indicated that style was most strongly related to preference. A three-way repeated measures analysis of variance disclosed a significant three-way interaction. An examination of charted cell means indicated a strong effect for style, which was noticeably suppressed by performance in the instrumental medium. Across pooled styles there was a slight preference for faster tempos and the instrumental medium.

Albert LeBlanc *Michigan State University, East Lansing*

Effects of Style, Tempo, and Performing Medium on Children's Music Preference

This study is part of a continuing series intended to present, test, and refine a theory of music preference. LeBlanc (1980) has presented a theoretical model that attempts to explain the influences at work on a listener who is making a music preference decision. This model has been revised and incorporated into a formally stated theory.[1] Its most recent revision is presented in Figure 1. The purpose of this study was to test the effects of three physical properties—style, tempo, and performing medium—on children's expressed music preference.

Style is considered a physical property of music because a composer's adherence to a particular one restricts the music devices available at a given point. This restriction is especially evident in the popular styles, with their traditions of tempo and performing medium. Style preference data has often been con-

[1]Albert LeBlanc. *An interactive theory of music preference.* Paper presented at the meeting of the College Music Society, San Antonio, Texas, October 1979.

This study was supported by a Michigan State University College of Arts and Letters All-University Research Grant.

Requests for reprints should be sent to Albert LeBlanc, Department of Music, Michigan State University, East Lansing 48824.

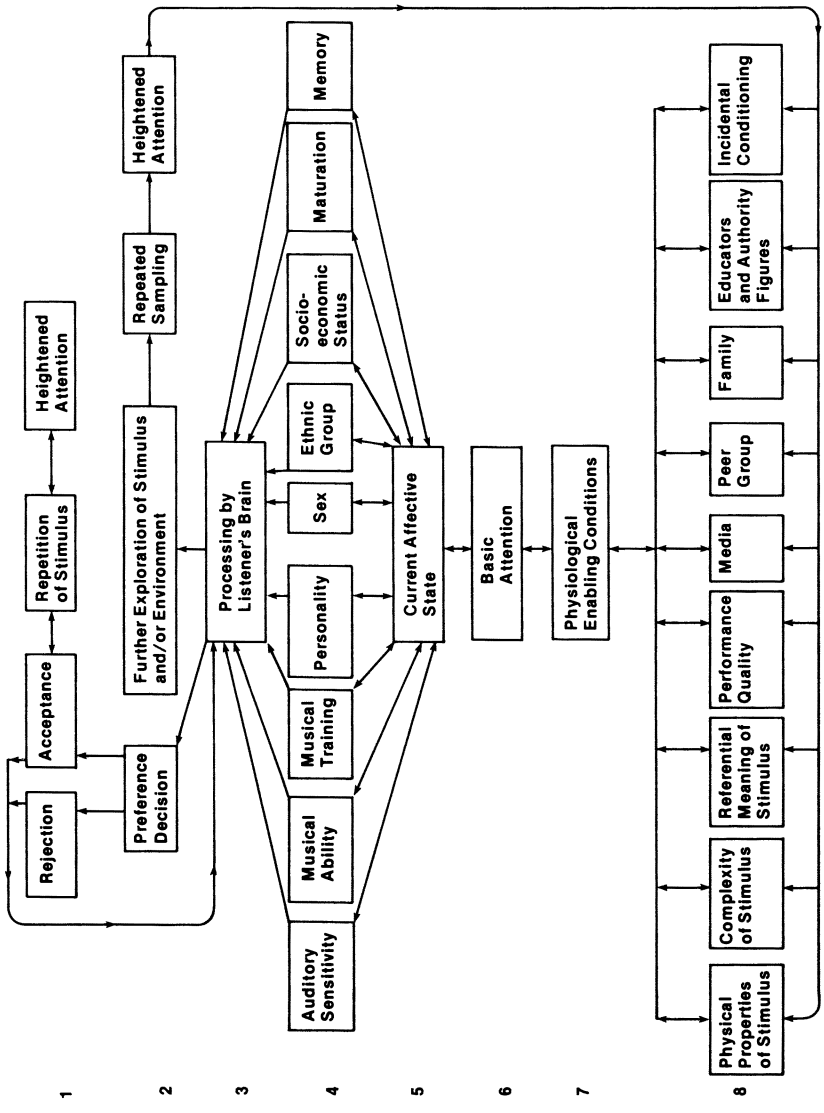


Figure 1—Sources of Variation in Music Preference

sidered a byproduct in studies whose primary focus was on something else. The literature was reviewed by Wapnick (1976).

Many previous studies exploring the effects of tempo and performing medium on listener response have not focused on music preference per se. Schoen and Gatewood (1927), Gundlach (1935), Hevner (1937), Rigg (1940), Middleton, Fay, Kerr, and Amft (1944), and Eagle (1971) have examined the mood effects of music as measured by subjects' responses to descriptive words while listening to music examples. Henkin (1955), Huebner (1976), and LeBlanc (1979) have conducted relevant studies in which the dependent variable was subjects' expressed music preference.

Gundlach (1935), Henkin (1955), and LeBlanc (1979) interpreted factors potentially related to tempo in exploratory factor analyses of listener preference responses as "dynamical," "rhythm," and "rhythmic dynamism," respectively. Henkin's "orchestral color" and LeBlanc's "novel timbres" factors may have some bearing on performing medium.

Hevner (1937) concluded that slow tempos express dignity, calmness, and sadness while fast tempos indicate happiness and restlessness. Rigg (1940) confirmed these findings and speculated that tempo might have more influence over the emotional suggestiveness of music than any other single factor. Examining listener preference responses to art music stimuli, Huebner (1976) found a statistically significant interaction between tempo and different approaches to listening among sixth-grade students.

Wapnick (1980) asked subjects to set piano music excerpts to the most preferred tempo, using a continuously variable control dial linked to a Lexicon Corporation Varispeech II Speed/Time Compressor/Expander. This task could be considered analogous to making a preference response. With college music majors Wapnick found a statistically significant interaction between preferred tempo and excerpt familiarity. When pitch and timbre were held constant through experimental design, Wapnick's subjects showed a bias toward fast tempos. This bias was distinctly greater for music examples familiar to subjects.

In the area of research on performing medium, Schoen and Gatewood (1927) concluded that vocal music had more power than instrumental music to elicit a definite emotional response, attributing this advantage to the presence of words. Middleton, Fay, Kerr, & Amft (1944) found popular vocal music more effective than instrumental waltzes in reducing college students' feelings of tiredness or unpleasantness. In contrast, Eagle (1971) obtained mood responses that were significantly higher for instrumental than for vocal music. He observed that subjects responded differently to vocal and instrumental music even though both performing media may seem to present music that reflects the same mood qualities. Gaston (1951) felt that the most stimulative type of music is that performed in the instrumental medium. He also placed great emphasis on the effect of rhythm in bringing about mood change through the use of music. Gaston's interest in using music factors (physical properties) to encourage mood change in listeners is shared by many music therapists.

The primary objective of this study was to assess the effect of different generic styles, fast and slow tempos, and vocal and instrumental performing media on children's expressed music preference. Secondary objectives were to survey comparative preference for a variety of generic styles and to measure the re-

liability of the preference test that was developed for this study.

Generic styles were defined here as broad stylistic categories used to specify identifiable types of music within the concert and popular music traditions. It was assumed that a student's confidential self-report was a viable way to measure music preference and that student response to the music examples used was indicative of student response to that style in general. The study was limited to fifth-grade students.

PROCEDURE

A listening tape of music examples was prepared, incorporating fast and slow vocal and instrumental excerpts within the generic styles of rock/pop, country, older jazz, newer jazz, and art music. For exploratory purposes a style category of band music was created. Because of the rarity of solo voice recordings with band, two additional rock/pop examples were paired with these to complete the 24 example tape. The musical phrase determined the length of each excerpt, and excerpts ranged from 26 to 48 seconds in duration, with a mean of 36 seconds.

Examples were chosen according to the way style projected aurally as opposed to relying on the most typical stylistic associations of performers. Assignment to style categories was supported by reference to the generic style popularity charts in *Billboard* magazine and airplay on radio programs devoted to specific styles. Because it was difficult to find pure instrumental examples within the rock/pop and country styles, instrumental sections within vocal compositions were used when necessary.

An effort was made to select examples that would provide a clear contrast of tempo. Slow examples ranged from M.M. beat note = 40 to 80 with a mean of 60, while fast examples ranged from M.M. beat note = 120 to 280 with a mean of 160. There was a danger that very slow examples might be heard subdivided, with each subdivision taken as a beat and very fast examples heard as one beat to the measure. This would cause problems only if it changed the general impression of tempo given by the music example. To check this, three music students independently measured the tempo of each example using an aural/visual electric metronome. In addition to measuring actual tempo, the students were asked to give their subjective categorization of each example as either fast or slow. A few examples were heard subdivided or one beat to the measure, but no reversals were reported between fast and slow tempo. Examples were placed on the tape in random sequence and are shown in Table 1.

The response sheet consisted of 24 seven-step response continua anchored by the words "like" and "dislike." The recorded tape and its response sheet were called the Style, Tempo, and Medium Preference Index (STEMPI).

The preference measure was administered to 107 students from four classes in central Michigan. Three classes were in a predominantly rural area while one was in an urban district. There were few black students, but Hispanic and American Indian minorities were well represented. The overall socioeconomic status of the sample was lower middle class. Behavior observation was carried out during each test administration as a rough check on the truthfulness of student responses, and to gather contextual information useful in interpreting the results of the study.

Table 1—Preference Results on the First Administration of STEMPI

Rank	Rating Mean	SD	Style, Tempo, Medium	Performer/Title	Duration	Record Label, Number
1	6.83	.82	Rock/Pop, Fast, Vocal	Andrew Gold/ "Lonely Boy"[a]	:44	Asylum/1086
2	6.72	.81	Rock/Pop, Fast, Vocal	Heart/ "Barracuda"	:40	Portrait/34799
3	6.61	1.23	Country, Fast, Vocal	Carpenters/ "Sweet, Sweet Smile"	:38	A & M/SP-4703
4	6.46	1.25	Rock/Pop, Slow, Vocal	Carly Simon/ "Nobody Does It Better"[a]	:38	Elektra/E-45413-A
5	6.40	1.46	Rock/Pop, Fast, Instrumental	Queen/"Liar"[b]	:29	Elektra/EKS-75064
6	6.31	1.49	Rock/Pop, Slow, Vocal	Leo Sayer/ "When I Need You"	:48	Warner Bros./BSK 3101
7	5.86	2.02	Rock/Pop, Slow, Instrumental	Peter Gabriel/ "Waiting for the Big One"[b]	:31	Atco/SD36-147
8	5.59	2.15	Country, Slow, Vocal	Cal Smith/ "Come See about Me"	:26	MCA/2266
9	5.48	2.14	Band, Fast, Instrumental	Eastman Wind Ensemble/ "Barnum and Bailey's Favorite"[a]	:33	Mercury/50113
10	5.33	1.97	Country, Slow, Instrumental	Emmylou Harris/ "Making Believe"[b]	:37	Warner Bros./BSK 3115
11	5.29	2.10	Country, Fast, Instrumental	Brown, Sullivan & Co./ "Essence of Sequatchie County"	:30	Sequatchie/NR-1933
12	5.23	1.98	New Jazz, Fast, Instrumental	Shelly Manne and His Men/ "Bernie's Tune"	:27	Contemporary/C 3516
13	4.72	2.38	Old Jazz, Fast, Instrumental	Muggsy Spanier and His Ragtime Band/"At Sundown"	:26	RCA/LPM-1295
14	4.18	2.46	Old Jazz, Fast, Vocal	Lee Wiley/ "Indiana"	:37	Monmouth/MES 7041

Table 1—Continued

Rank	Rating Mean	SD	Style, Tempo, Medium	Performer/Title	Duration	Record Label, Number
15	3.99	2.15	Art Music, Fast, Instrumental	Czech Philharmonic/ "Slavonic Dance No. 5, Op. 46" (Dvořák)	:34	Parliament/PLP-121-2
16	3.83	2.20	New Jazz, Slow, Instrumental	Flip Phillips/ "Around Midnight"	:37	(Taped from broadcast)
17	3.64	2.67	New Jazz, Slow, Vocal	Cleo Laine/ "Send In the Clowns"	:42	RCA/LPL 1-5015
18	3.34	2.32	Old Jazz, Slow, Instrumental	Paul Barbarin/ "Crescent Blues"	:39	Atlantic/1215
19	3.03	2.26	Band, Slow, Instrumental	Eastman Wind Ensemble/ "Song without Words" (Holst)[a]	:36	Mercury/MG50088
20	3.01	2.43	New Jazz, Fast, Vocal	Rita Coolidge/ "Mean to Me"	:34	A & M/SP4531
21	2.98	1.96	Art Music, Slow, Instrumental	Symphony Orchestra of Southwest German Radio/"Allegro Moderato from Seventh Symphony" (Bruckner)	:42	Vox/VBX117
22	2.33	1.96	Old Jazz, Slow, Vocal	Louis Armstrong/"Just a Closer Walk with Thee"	:32	Audio Fidelity/ AFSD5924
23	2.04	1.79	Art Music, Fast, Vocal	Dietrich Fischer-Dieskau/ "Am Feierabend" (Schubert)	:34	Angel/3628 3S
24	1.26	.81	Art Music, Slow, Vocal	Maureen Forrester/"Wenn mein Schatz Hochzeit macht" (Mahler)	:39	RCA/LM-2371

Note. Ratings from one = lowest preference to seven = highest preference

[a]These examples were deleted from the analysis of variance to obtain a balanced design.

[b]Exclusively instrumental segments were excerpted from these vocal compositions.

RESULTS

A test-retest procedure was carried out to measure the test's reliability in terms of the stability of total scores over an eight-day interval. All four classes took the test twice, with 101 students present at both testings. This yielded a Pearson correlation of .87 between test and retest total scores.

Coefficient alpha was computed as an index of common factor concentration, giving the proportion of test variance attributable to common factors among the items. In the case of STEMPI, the presumed common factor would be an individual's preference for listening to various kinds of music. Cronbach (1951) writes that coefficient alpha used with this interpretation serves purposes claimed for indexes of homogeneity. He is critical of test homogeneity as a measurement ideal, and points out that alpha can be high even when items have small intercorrelations. A large alpha indicates that a large proportion of test variance can be attributed to the principal factor running through the test. These considerations would make coefficient alpha a highly appropriate reliability estimate for STEMPI, which attempted to measure comparative listening preference for widely disparate music styles.

An alpha of .88 was obtained for the total test at its first administration, and this rose to .89 at retest. Four of STEMPI's 24 music examples were deleted to balance the analysis of variance design, so alpha was computed for the resulting 20-example test, yielding a coefficient of .86. Very little reliability was lost in deleting the four examples. The style subtests gave alphas of .50 for rock/pop, .73 for country, .79 for older jazz, .68 for newer jazz, and .50 for art music. Each style subtest consisted of four music examples.

Although most students took the test twice, their initial response is presented here in the belief that it is a better sample of affective response (see Table 1). Results confirmed the findings of previous studies (Greer, Dorow, & Randall, 1974; LeBlanc, 1979) that indicated a preference for rock/pop music over art music at this age level. A preference hierarchy emerged (see Table 2).

A correlation analysis was carried out to measure the relationship of the three design variables (style, tempo, and medium) with student preference response. Simple Pearson correlations were computed between the design variables and preference response, resulting in *r*s of .48 for style ($p < .01$), .17 for tempo, and .01 for medium. Multiple correlations were computed to determine the effect of adding the second and third design variables to a regression

Table 2—Preference Results According to Generic Style

Style	*Rank*	*Rating* $\bar{X}$	*Rating* *SD*
Rock/Pop[a]	1	6.43	0.34
Country	2	5.70	0.62
Band[b]	3	4.25	1.73
New Jazz	4	3.93	0.94
Old Jazz	5	3.64	1.04
Art Music	6	2.57	1.18

[a]Based on six examples
[b]Based on two examples

equation set up to predict preference response from style. When tempo was added to style, R rose from .48 (the value of the simple correlation) to .51. The addition of medium raised R to .53. When these multiple correlations were squared, 23% of preference variation was explained by style, 26% by style and tempo, and 28% by style, tempo, and medium.

The style variable was broken down into its constituent categories and simple correlations computed with preference response. The resulting rs were .42 for rock/pop ($p < .01$); .20 for country ($p < .05$); − .05 for band, − .12 for newer jazz, and − .35 for art music ($p < .01$). A negative correlation indicates a lower preference response in the context of the styles being measured.

Partial correlations were computed to measure the relationship between each design variable and preference response with the effect of other design variables statistically removed. Results in Table 3 show that the highest partial correlations between design variables and preference response are usually obtained by controlling the other design variables.

Significance testing of the effects of the design variables was carried out using a three-way multivariate analysis of variance (Finn, 1974). Two examples of band music had been included in STEMPI for exploratory purposes, and two extra rock/pop examples had been added to maintain a balance between vocal and instrumental examples. These four examples were dropped from the analysis to create a design that was completely balanced on all classification variables. This produced a 5 × 2 × 2 repeated measures design with five levels of generic style, two levels of tempo, and two levels of performing medium. The analysis was based entirely on data from the first test administration.

A multivariate model was chosen over the more traditional mixed model, which uses subjects as a classification, because the multivariate model is not bound by assumptions of equal variances and covariances (compound symmetry) across the repeated measures. In the multivariate model the repeated measures of music preference were not treated as a factor in the sampling design but as multiple intercorrelated responses from the same subjects (Finn & Mattsson, 1978). The effects of each style classification were assessed through an examination of a priori simple contrasts of means using art music as the standard of comparison. Previous research had indicated that art music could be expected to receive the lowest preference score.

Table 3—First and Second Order Partial Correlations between Preference Response and Design Variables

Variables Correlated and Controlled	*Partial Correlation*
Style Controlling Tempo	.49**
Style Controlling Medium	.50**
Style Controlling Tempo and Medium	.51**
Tempo Controlling Style	.20*
Tempo Controlling Medium	.17
Tempo Controlling Style and Medium	.20*
Medium Controlling Style	.15
Medium Controlling Tempo	.01
Medium Controlling Style and Tempo	.15

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

The multivariate null hypothesis posited that the 20 cells of the ANOVA design would have equal means. Rao's approximation of the likelihood ratio criterion yielded $F(19,88) = 128.19$, $p < .01$. The multivariate null hypothesis was rejected because of significant variation attributable to the design variables.

A step-down analysis was conducted to test for the unique effect of each element in the ANOVA design. After the first step-down test, which is the same as a univariate F, the procedure becomes analogous to a set of sequentially ordered analyses of covariance, eliminating the effect of all elements that have already been tested. Because of this, ANOVA elements were organized in a simple-to-complex hierarchy so that complex elements would be tested first for a unique and significant contribution to overall variation. If these complex elements could be eliminated early in the step-down procedure, a more economical explanation of music preference behavior could be advanced. Table 4 presents the results of step-down analysis. The first F to be interpreted indicated a significant three-way interaction of style, tempo, and medium. This meant that none of the ANOVA elements appearing earlier in the order of elimination could validly be tested because their tests were confounded with

Table 4—Multivariate Step-Down Analysis

Source of Variation	df_1,	df_2	F^a
Style (S)[b]			
S1	19,	87	311.65**
S2	19,	86	54.53**
S3	19,	85	7.22**
S4	19,	84	43.80**
Tempo (T)	19,	83	8.52**
Medium (M)	19,	82	3.11
Two-Way Interactions			
S1 × T	19,	81	0.12
S2 × T	19,	80	2.08
S3 × T	19,	79	0.45
S4 × T	19,	78	17.81**
S1 × M	19,	77	24.38**
S2 × M	19,	76	12.27**
S3 × M	19,	75	7.72**
S4 × M	19,	74	3.82*
T × M	19,	73	14.06**
Three-Way Interactions			
S1 × T × M	19,	72	1.58
S2 × T × M	19,	71	0.07
S3 × T × M	19,	70	10.37**
S4 × T × M	19,	69	9.43**

Note. Step-down tests should be interpreted from the bottom up.

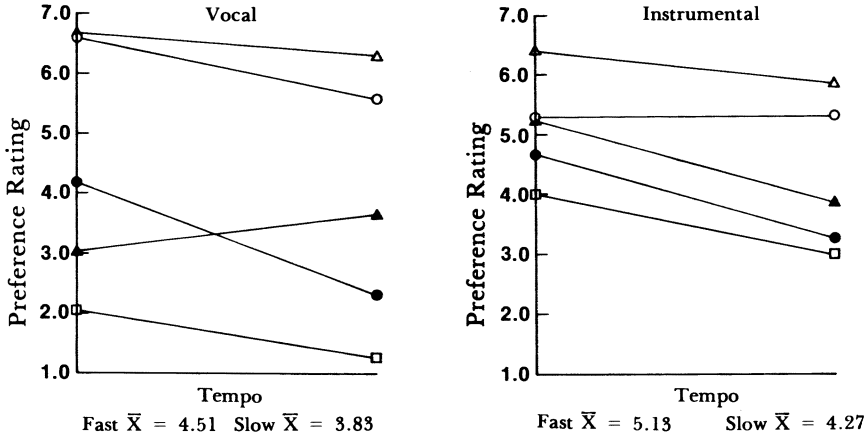
[a]Differentiation of the step-down *F*s

[b]The effect of different styles was assessed by the following symbolic contrasts: S1 = Rock/Pop vs. Art Music, S2 = Country vs. Art Music, S3 = Older Jazz vs. Art Music, and S4 = Newer Jazz vs. Art Music.

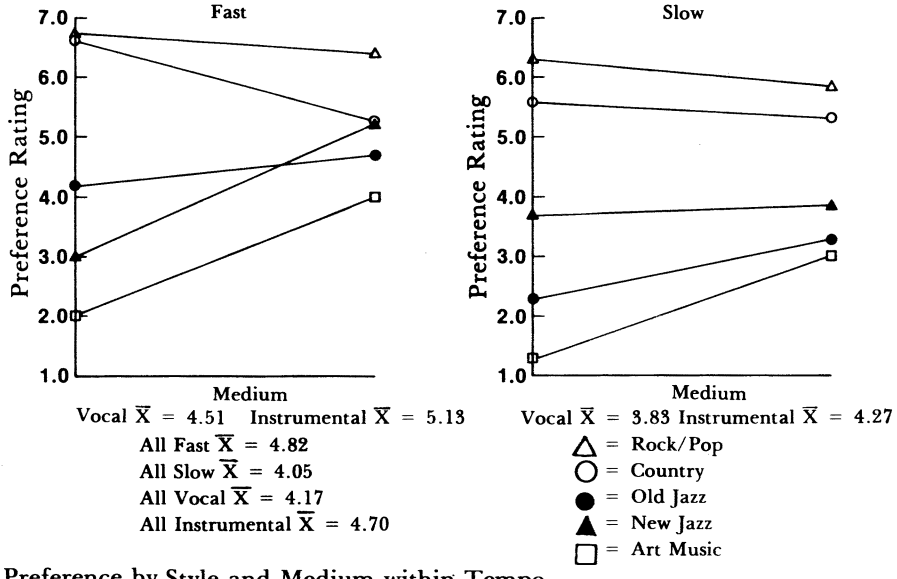
*$p < .05$

**$p < .01$

significant variation due to the effect of the last element. Because the significant interaction precluded an interpretation of simple effects, cell means were charted across various combinations of design variables. This facilitated a study of the interaction. The most informative charts are presented in Figures 2 and 3.



Preference by Style and Tempo within Medium



Preference by Style and Medium within Tempo

Figure 2

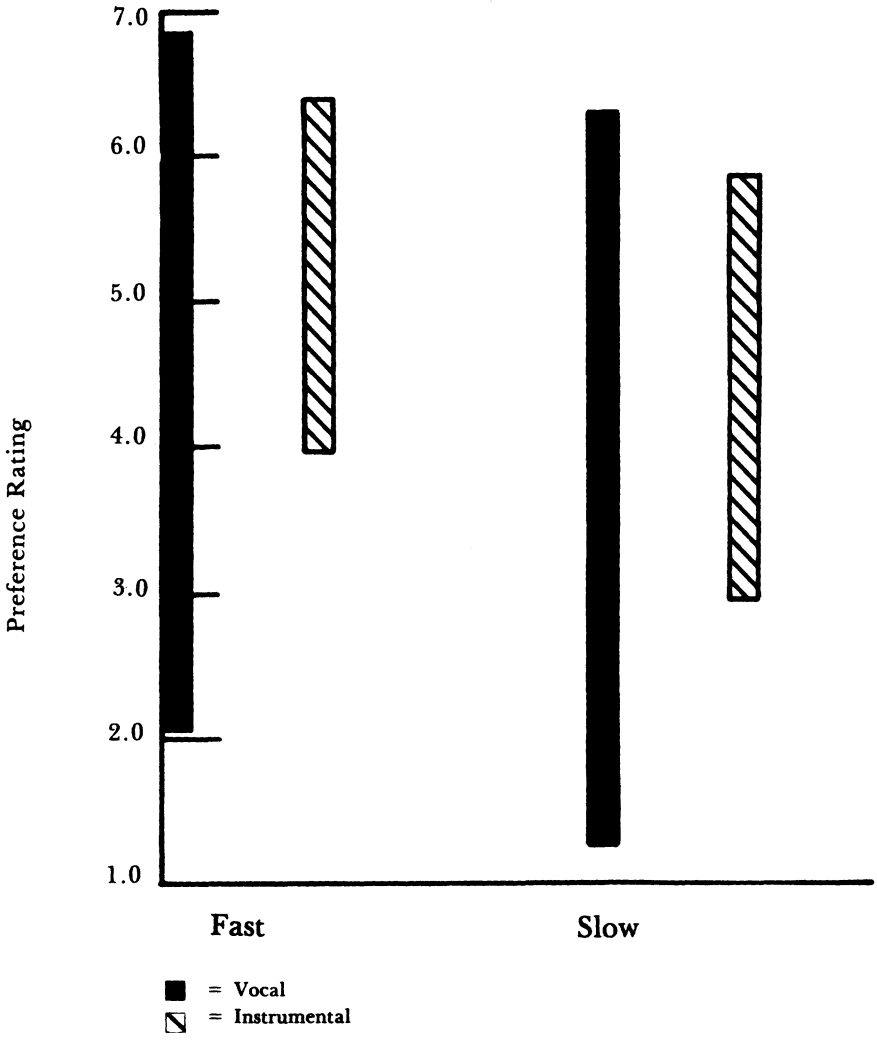


Figure 3—Range of Preference Ratings across Styles and within Tempo and Medium

DISCUSSION

Reliability of the test was considered adequate. Music preference results were not surprising in view of previous research findings. Very low standard deviations for "Barracuda," "Lonely Boy," and "Wenn mein Schatz Hochzeit macht" indicate a comparative unanimity of preference for the first two and dislike for the third title. The highest ranking examples are almost exclusively from styles favored by the broadcast media and adolescent peer group. Considered in the light of previous research, this tends to substantiate the influence of the media and peer group variables described in LeBlanc's theoretical model.

That a band music example, "Barnum and Bailey's Favorite," rates fairly high does not argue against this interpretation. That example actually gets a fair amount of airplay in radio and television commercials, and marching bands are supported by the adolescent peer group, as observed at school athletic events. Within the art music category, instrumental examples were preferred over vocal, and fast examples were preferred over slow ones. Vocal art music was ranked at the very bottom.

Behavior observation data may be considered at this point to aid in the interpretation of preference results. Students expressed disappointment when some examples were finished, and 75% of these examples had benefited from recent radio airplay. When students patted their feet to the beat or moved their bodies to the music, 77% of these examples were fast and the remaining ones had a very obvious beat. This observation calls to mind the rhythmic dynamism factor, which emerged in LeBlanc's (1979) factor analysis, and suggests that it is not definable in terms of tempo alone. Students responded to some examples (83% of which were slow) with derision. Vibrato was the most prominent target of mimicry when students made fun of vocal examples (performed by altos or contraltos) they didn't like. The most typical method of mimicking vibrato was rubbing an extended finger up and down the throat while pretending to sing or howl toward the ceiling. The mimicry of instrumental performers occurred whenever there was a prominent instrumental part. This appeared to have no direct connection with the preference results. Interestingly, students never made a mistake in identifying the instrument heard.

Several idiosyncracies of particular examples were spotlighted by behavior observation. Cleo Laine's British accent and the German language in both vocal art music examples received ridicule from student listeners. In every case this ridicule came soon after the vocal entry; students were not critical during the instrumental introduction. Students showed a strong negative reaction to Louis Armstrong's extremely slow performance of "Just a Closer Walk with Thee." Two of the verbal comments made were "Ole Grandpa!" and "That's supposed to be faster, isn't it?" Students were greatly amused by the string bass solo that led into Rita Coolidge's performance of "Mean to Me."

Simple correlation analysis showed that style was by far the strongest design variable in terms of preference response, with tempo showing a moderate relationship to the criterion and medium a negligible one. When multiple correlations were squared, they indicated that tempo and medium contributed 5% to the 28% total of explained criterion variation. Simple correlations of each style with preference response were in agreement with the trend seen in preference ratings. Perhaps the most interesting of the correlation results was the partial correlation analysis, which showed that the relationship of each design variable with the preference rating criterion could be strengthened by controlling the other two design variables. This was especially notable in the case of performing medium, whose correlation with preference rose from .01 to .15 when the effect of style was removed. The presence of the style variable was masking the relationship between performing medium and preference.

The ANOVA finding of significant interactions had been foreshadowed by the partial correlation results. The nature of the interactions and the most important findings of this study may best be approached through a careful study of Figures 2 and 3. In Figure 2, interaction appears as a difference in

slope between the charted lines that represent each style. The effect of style is prominent throughout Figure 2, with few reversals of the established preference hierarchy. The styles supported by the broadcast media and adolescent peer group are consistently rated higher. The effect of style is strongest in the vocal medium, and it is noticeably suppressed in the instrumental medium. This suppressing effect operates on both ends of the preference spectrum in fast and slow tempos and is portrayed graphically in Figure 3. Across pooled styles there is a slight preference for faster tempos ($\overline{X}$ = 4.82 for fast, $\overline{X}$ = 4.05 for slow) and for the instrumental medium ($\overline{X}$ = 4.70 for instrumental, $\overline{X}$ = 4.17 for vocal).

Is there a plausible explanation for these unexpected findings? Performing art music in the instrumental medium may remove some of the elements most disliked by young listeners, such as lyrics in a foreign language and the prominent use of vibrato. By the same token, performing rock/pop and country music in the instrumental medium would remove some of the most popular aspects of these styles, such as familiar lyrics in the colloquial native language based on romance, and singers made familiar through media exposure.

CONCLUSIONS

Teachers who want to encourage a positive listener response to jazz and art music should introduce fast instrumental examples first and progress to slow instrumental, fast vocal, and slow vocal examples, in that order. This sequence would take advantage of the entering affect levels found in this study. Use of the instrumental medium seems to negate the strong style-oriented entering preference that works to the disadvantage of art music. There is a slight but general preference for faster tempos and for the instrumental performing medium. Band music seems to be the form of art music most likely to function as a critical competitor to the popular styles. It might be good to introduce it first in a teaching sequence designed to promote listening to art music.

Future research should include a similar study of the effect of tempo and performing medium, using style as a blocking factor with comparatively few levels. As many examples as possible should be used within ANOVA classification cells to reduce the influence of idiosyncratic reaction to specific examples. Extremely fast and slow examples should be avoided because student reaction to extremes of tempo may differ from their reaction to moderate tempo variation. Within the area of vocal music, the effects of a performer's sex, vibrato, vocal range, and language of lyrics are of interest. Preference for marching and concert band music in comparison to other styles should be explored.

REFERENCES

Cronbach, L. J. Coefficient alpha and the internal structure of tests. *Psychometrika,* 1951, *16,* 297-334.

Eagle, C. T., Jr. Effects of existing mood and order of presentation of vocal and instrumental music on rated mood responses to that music. (Doctoral dissertation, University of Kansas, 1971). *Dissertation Abstracts International,* 1971, *32,* 2118A. (University Microfilms No. 71-27,139)

Finn, J. D. *A general model for multivariate analysis.* New York: Holt, Rinehart & Winston, 1974.

Finn, J. D., & Mattsson, I. *Multivariate analysis in educational research.* Chicago: National Educational Resources, 1978.

Gaston, E. T. Dynamic music factors in mood change. *Music Educators Journal,* February 1951, *37,* 42-44.

Greer, R. D., Dorow, L. G., & Randall, A. Music listening preferences of elementary school children. *Journal of Research in Music Education,* 1974, *22,* 284-291.

Gundlach, R. Factors determining the characterization of musical phrases. *American Journal of Psychology,* 1935, *46,* 624-643.

Henkin, R. I. A factorial study of the components of music. *Journal of Psychology,* 1955, *39,* 161-181.

Hevner, K. The affective value of pitch and tempo in music. *American Journal of Psychology,* 1937, *49,* 621-630.

Huebner, M. A. The effect of three listening methods and two tempi on musical attitude of sixth-grade students. (Doctoral dissertation, University of Maryland, 1976). *Dissertation Abstracts International,* 1976, *37,* 3257A. (University Microfilms No. 76-27,394)

LeBlanc, A. Generic style music preferences of fifth-grade students. *Journal of Research in Music Education,* 1979, *27,* 255-270.

LeBlanc, A. Outline of a proposed model of sources of variation in musical taste. *Bulletin of the Council for Research in Music Education,* 1980, *61,* 29-34.

Middleton, W. C., Fay, P. J., Kerr, W. A., & Amft, F. The effect of music on feelings of restfulness-tiredness and pleasantness-unpleasantness. *Journal of Psychology,* 1944, *17,* 299-318.

Rigg, M. G. Speed as a determiner of musical mood. *Journal of Experimental Psychology,* 1940, *27,* 566-571.

Schoen, M., & Gatewood, E. L. The mood effects of music. In M. Schoen (Ed.), *The effects of music.* New York: Harcourt Brace Jovanovich, 1927.

Schoen, M., & Gatewood, E. L. Problems related to the mood effects of music. In M. Schoen (Ed.), *The effects of music.* New York: Harcourt Brace Jovanovich, 1927.

Wapnick, J. A review of research on attitude and preference. *Bulletin of the Council for Research in Music Education,* 1976, *48,* 1-20.

Wapnick, J. Pitch, tempo, and timbral preferences in recorded piano music. *Journal of Research in Music Education,* 1980, *28,* 43-58.

October 28, 1980