

Effect of Intensive Instruction on Elementary Students' Memory for Culturally Unfamiliar Music

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Abstract

Previous researchers have found that both adults and children demonstrate better memory for novel music from their own music culture than from an unfamiliar music culture. It was the purpose of this study to determine whether this “enculturation effect” could be mediated through an extended intensive instructional unit in another culture’s music. Fifth-grade students in four intact general music classrooms (two each at two elementary schools in a large U.S. city) took part in an 8-week curriculum exclusively concentrated on Turkish music. Two additional fifth-grade classes at the same schools served as controls and did not receive the Turkish curriculum. Prior to and following the 8-week unit, all classes completed a music memory test that included Western and Turkish music examples. Comparison of pretest and posttest scores revealed that all participants ($N = 110$) were significantly more successful overall on the second test administration. Consistent with previous findings, participants were significantly less successful remembering items from the unfamiliar music culture, a result that was consistent across test administrations and between instruction and control groups. It appears that the effect of enculturation on music memory is well established early in life and resistant to modification even through extended instructional approaches.

Keywords

cross-cultural music, music memory, elementary music, enculturation

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Among the goals of the National Standards is the call for children to be “able to develop and present basic analyses of works of art from a structural, historical and cultural perspective” and to demonstrate “the ability to understand and evaluate work in the various arts disciplines” (Consortium of National Arts Education Associations, 1994, p. 19). In the past 15 years since the National Standards were adopted, the curriculum of American music education has become more multicultural. As well as helping to address Standard 9—understanding music in relation to history and culture—this change is seen as having important social and musical benefits for all children and offers the many children from different cultures an opportunity to connect with their school music program. The demonstration of musical understanding called for by the standards may take a variety of forms but must reasonably begin with the successful reception, organization, and retention of musical information. However, research in music education has just begun to address the role of culture in shaping music cognition and understanding. We do not yet know the extent to which children can successfully apply their encultured musical knowledge to music from outside their own culture.

Sensitivity to culture-specific music practices emerges as early as 6 to 12 months of age (Hannon & Trehub, 2005a; Lynch & Eilers, 1992) as infants lose the ability to discriminate among out-of-culture pitch and metric categories. However, after relatively brief exposure to Balkan music, Western-born 12-month-olds discriminated rhythm pattern violations characteristic of Balkan folk songs (Hannon & Trehub, 2005b), suggesting that sensitivity to unfamiliar music styles can be relearned quickly at this age. By comparison, adults demonstrated a much lesser degree of learning. Likewise, Turkish conservatory students who had received extensive training in Western art music did not demonstrate memory for Western music examples at the same level as memory for Turkish music examples (Demorest, Morrison, Beken, & Jungbluth, 2008).

In an ongoing program of research into cross-cultural music cognition, we have used music memory as a comparative measure of music understanding for both culturally familiar and unfamiliar music. The benefit of a memory task is that it does not require any culture-specific or training-specific judgments to be completed successfully. Previous researchers have found that both adults (Demorest et al., 2008, 2010) and children (Morrison, Demorest, & Stambaugh, 2008) demonstrated better memory for music from their own culture than from an unfamiliar music culture, a phenomenon that has been labeled an *enculturation effect*. This effect is independent of familiarity with specific pieces since all items used in the previous studies have been unknown to the participants. Rather, it would be accurate to say that listeners demonstrated familiarity with the general organizational principles of the music examples from their home culture, music constructed according to a familiar rule system. Also, this effect has been independent of level of music training, suggesting that it reflects informal learning accrued across an extended period of cultural immersion. It appears that—perhaps analogous to language—musical enculturation is not necessarily restricted to just one “home” music, as recent research has reported that individuals

raised in an environment with regular repeated exposure to more than one music tradition demonstrated comparable memory for both (Wong, Roy, & Margulis, 2009).

Studies with elementary-age children have found that familiarity with a musical style tends to correlate with preference for examples of that style (Demorest & Schultz, 2004; Fung, 1996; however, see Brittin, 1991). Similarly, study of culturally unfamiliar music selections in a general music class has led to increased preference among elementary students but only for the specific pieces taught (Shehan, 1985). Among college students, instruction resulted in greater knowledge about or familiarity with the pieces taught but without a commensurate increase in preference (Price, 1988; Yarbrough & Price, 1987), although in these cases, the unfamiliar music was selected from the Western classical tradition. In a study comparing cross-cultural memory performance among elementary students and adults (Morrison, Demorest, & Stambaugh, 2008), both fifth graders and adults exhibited an enculturation effect in their memory for culturally unfamiliar music, and this effect was present even in music that was much less complex (single instrument texture) than the material used in previous research.

It is unclear whether this enculturation effect can be changed through formal instruction. Turkish college students demonstrated better performance for their native music even after studying Western music performance, but as results of Wong et al.'s (2009) study of bimusicalism suggest, it is likely that instruction begun at an earlier age could have more of an impact. Although concentrated instruction in unfamiliar musical styles has demonstrated effects on self-reported familiarity and preference, it is not known whether such instruction could lead to changes in cognitive skills (e.g., memory) or changes generalizable beyond specific music examples. Recent neurological evidence suggests that culturally unfamiliar music demands a heavier cognitive load as demonstrated by stronger and more extensive regions of cortical activity (Demorest et al., 2010; Nan, Knösche, Zysset, & Friederici, 2008), and Eerola and colleagues (Eerola, Himberg, Toiviainen, & Louhivuori, 2006) found that participants exhibited reduced success on general cognitive tasks when encountering culturally unfamiliar music. It was the purpose of this study to determine whether children's memory for culturally unfamiliar music could be mediated through an extended intensive instructional unit on music of that culture. We speculated that among elementary students, an extended series of interactions with a variety of examples from an unfamiliar music tradition would result in greater familiarity and, in turn, greater facility with an unfamiliar musical system.

Method

Participants were fifth-grade students attending one of two elementary schools located in a large city in the Northwest region of the United States. By including fifth-grade students, we intended to tie into previous work (Morrison, Demorest, & Stambaugh, 2008) that demonstrated a clear difference in memory for culturally familiar music among students at this level. At each school, two of the three fifth-grade music classes were assigned randomly to receive an 8-week immersive unit in Turkish music. None

of the participating students indicated any familiarity with Turkish music. The remaining class at each school served as a control. Classes were taught by each school's music teacher.

Test Procedure

Prior to implementation of the curricular unit, participants completed a music memory test similar to that used in an earlier study of elementary listeners (Morrison, Demorest, & Stambaugh, 2008). Stimuli consisted of both culturally familiar (Western) and culturally unfamiliar (Turkish) recorded music examples. Western examples featured solo acoustic guitar; Turkish examples featured solo *ud* (a plucked string instrument found in Turkish, Arab, and Persian cultures). Selections were matched as closely as possible for texture, timbre, and tempo and were characterized by a prominent melodic line with internal harmonic and melodic repetition. Examples were approximately 30 s in length (range 25 to 33 s) and were edited to begin and end at musically sensible points.

Participants heard the three Western examples followed by 12 brief (4- to 8-s) excerpts consisting of 6 target excerpts taken from the three longer examples and 6 foils not heard previously. To ensure similarity of style, recording quality, and other surface characteristics, foils were taken from the same pieces as the longer examples but featured parts of the recordings not used in the original stimuli. For each of the 12 test items, participants were asked to indicate on the test sheet whether they had heard the item as part of one of the longer examples (by circling yes or no). Following the Western examples and test items, participants followed the same procedure with the three Turkish examples and 12 test items. We retested the participants using identical procedures and materials after completion of the 8-week instructional period. Prior to both the pretest and posttest, participants listened to one practice example (a jazz piano piece), completed two practice test items, and had the opportunity to ask questions about the testing procedure. All procedures were carried out by the music teacher and were approved by and in accordance with the university's institutional review board.

Because we intended this study to investigate memory for culturally unfamiliar music (in this case, Turkish music) among young listeners encultured in the United States, it was imperative for us to identify participants who either were not born in the United States or were likely to be familiar with Turkish music. Prior to the pretest, participants completed an information sheet on which they indicated whether they were born in the United States as well as what language was spoken most often at home. For additional demographic information and to distract from any obvious focus on cultural background, we asked participants to indicate whether they were a boy or girl, grade at which they started in their current school, whether they took music lessons outside school, and their and their parents' favorite kind of music.

Immersion Curriculum

Two experienced elementary music educators designed and implemented an experimental, immersive curriculum comprising eight weekly 30-min lessons on music from

Turkey (Roberts, 2011). The lesson activities included singing, moving, playing instruments, and listening, with an emphasis on music literacy and cultural context. Within each lesson, the teachers made an effort to differentiate instruction by incorporating a variety of visual, aural, and kinesthetic learning experiences. Students had the opportunity to listen to and analyze Turkish music examples, play a simple Turkish drum pattern along with a recording, sing a Turkish folk song, learn and perform a Turkish folk dance, transfer a listening example to the xylophones, and read aloud about Turkish instruments and culture. Musical material was chosen from the folk and classical Turkish traditions that had some or all of the following characteristics: repetition, timbral contrast, fast tempi, thin textures, and minimal words. Materials included selections from the same artist and album as the test items so that students were familiarized with the specific style used in the pre- and posttests. The specific examples featured in the tests were excluded from the experimental curriculum.

Although the repertoire was new to the children, the structure of the lessons resembled previous experiences in the music class in that the 30-min period included four to six different musical experiences and covered a wide range of learning objectives. During the course of multiple lessons, students engaged with the same material repeatedly, which gave them the opportunity for continued, immersive experiences over time and allowed the instructors to teach the material incrementally, building on students' existing knowledge and skills. Cultural context was established through the integration of folk tales, riddles, and visual representations of Turkish culture. As a culminating experience, Turkish culture bearers interacted with students during one class period. The artists performed on the *ud* and the *riq* (a tambourine-like instrument), discussed Turkish musical traditions and stylistic and structural elements, and answered student questions.

Students in the control group experienced a similar curriculum, but the repertoire excluded music from Turkey. Lesson objectives for the control curriculum were identical to those of the experimental curriculum (singing, moving, playing instruments, listening, literacy, and cultural context). Specifically, students sang an English folk song; learned and performed a xylophone piece; listened to, analyzed, and played a simple drum pattern along with an East African music example; and learned and performed an Appalachian play-party game. The control group also interacted with the Turkish culture bearer for one class period in an effort to ensure that these students did not miss a cultural opportunity because of their status as control participants.

Results

We marked children's responses to pretest and posttest items as correct or incorrect. Participants who failed to respond to each test item, who were not present for both test sessions, or who indicated on the information sheet that they were not born in the United States were removed from the data set. This resulted in a final participant pool of 110 children (61 male, 49 female) out of the total 143 who had participated in the lessons. There were 73 participants who were members of the immersion classes (37 and 36 at the two schools, respectively) and 37 participants in the control classes (18 and 19 at the two schools, respectively).

We converted participants' raw scores on the memory tests to d' prime (d') to control for response bias (a tendency for participants to answer negatively or affirmatively). D prime measures the proportion of hits (correctly identified targets) to false alarms (incorrectly identified foils). One limitation of d' occurs in testing situations where participants might receive a perfect score on hits and false alarms or miss every item, resulting in an infinite d' statistic. Because the number of test items was relatively small, there were a number of perfect (six hits with no false alarms) or zero scores (no hits). We subsequently adjusted all d' scores using a procedure from Macmillan and Creelman (1991) in which all perfect scores (p value of 1) were adjusted by subtracting $1 \div 2N$ from their p value, in this case, $1 - 1/12$. All p values of zero were adjusted by adding the value $1 \div 2N$, or $1/12$.

Following the pretest, we tested the equivalence of the two school groups by using a repeated-measures ANOVA with one between-subjects (School 1, School 2) and one within-subjects (Western music, Turkish music) variable. Neither the main effect for school, $F(1, 130) = 0.15, p = .70$, nor the School \times Music interaction, $F(1, 130) = 1.13, p = .25$, was significant. Data for all participants were combined for the ensuing analyses.

After the 8-week instructional unit and completion of the posttest, we analyzed the data using a multivariate repeated-measures ANOVA with test (pretest, posttest) and music (Western, Turkish) as within-subjects variables and group (immersion, control) as the between-subjects variable. A significant main effect for test, $F(1, 108) = 32.94, p < .001$, indicated that all participants' scores for both musics improved between the pre- and posttests. A main effect for music, $F(1, 108) = 16.95, p < .001$, revealed that all participants more accurately remembered Western rather than Turkish music on both the pre- and posttests (Figure 1). There was no significant effect for group, and all interactions were nonsignificant.

Discussion

This study addressed the question of whether elementary students' memory for culturally unfamiliar music could be improved through an 8-week immersive curriculum focused on Turkish music. More specifically, we wanted to test whether the relatively poorer memory responses to culturally unfamiliar music examples found in previous research could be mitigated through classroom music instruction. We considered memory as one possible indicator of music comprehension and a potential and desirable skill-oriented outcome of music learning (Abril, 2006). Consistent with previous findings (Demorest et al., 2008; Morrison, Demorest, & Stambaugh, 2008), participants were significantly less successful remembering items from the unfamiliar music culture. This result was consistent across both the pretest and posttest administrations as well as between the instruction and control groups.

When compared to the real-world time span of music enculturation, an 8-week intensive instructional period is not particularly long. However, from a curricular perspective, it does represent a sizable portion of a year's music study and is likely much

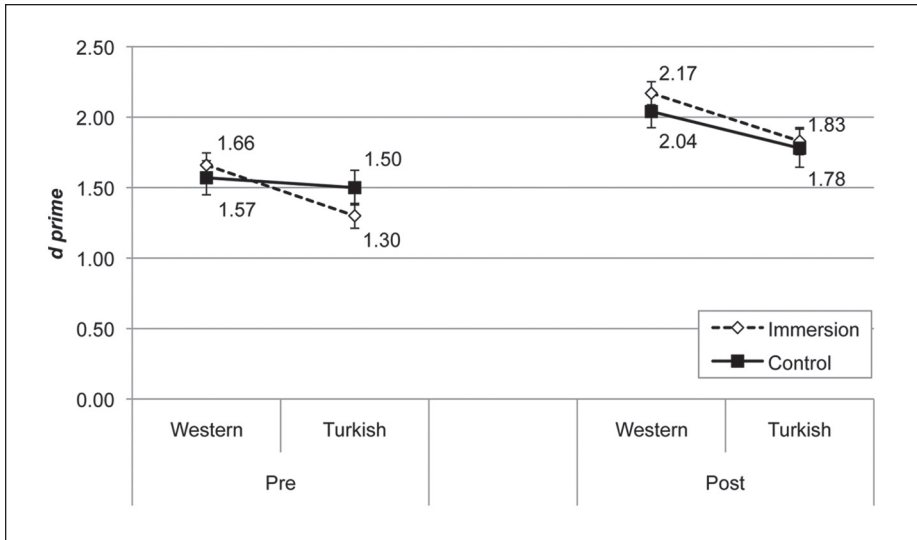


Figure 1. Mean (with standard error) pre- and posttest memory performance by group and music culture

longer than the period typically devoted to a single world music tradition. Although a number of researchers have explored world music instruction in various contexts, only a few experimental studies have involved exploration of teaching the music of one culture for any significant length of time (McKoy, 2004; Pembrook & Robinson, 1997; Shehan, 1984). In each of these studies, the authors compared the impact of different methods of instruction on learning outcomes, such as preference, attitude, and knowledge about or performance in the taught culture. Although preference was compared across cultures, no study's authors directly compared students' performance on in-culture versus out-of-culture tasks. Future researchers could investigate whether a more extended period of instruction or a differently distributed array of classroom activities might lead to better performance on culturally unfamiliar music. One may also speculate whether a similar intensive experience might have a stronger effect on younger students although culture-specific responses to music appear in infancy (Hannon & Trehub, 2005a) and seem to be well in place by 10 years of age (Lynch & Eilers, 1991).

The most logical interpretation of this finding is that all participants simply got better at taking the test. Recent data suggest that performance improvements attributable to a testing effect may not necessarily be a result of increased familiarity of the items as much as recall of the items from the previous test administration (Chan & McDermott, 2007). However, the extended period between the pretest and the posttest may call this specific interpretation into question. Nevertheless, as both groups demonstrated equivalent improvement on both music types, it would be difficult to argue

that improvement in the intensive group's Turkish music scores were attributable to instruction. Despite the improved overall performance, the differential between memory for culturally familiar music examples and that for culturally unfamiliar ones remained relatively unchanged.

In the few studies that have addressed the question, instances in which individuals demonstrated acquired implicit knowledge of culturally distant music practices have been in cases of largely passive or informal musical encounters (Hannon & Trehub, 2005b; Loui, Wessel, & Hudson Kam, 2010; Wong et al., 2009). More formal instructional settings, including conservatory study of a nonnative music tradition (Demorest et al., 2008) and the intensive curricular model described in the present study, have not resulted in significant changes to music memory skills. It may be that memory is particularly resistant to attempts at formally or systematically imposed enculturation. Perhaps the opportunity for individuals to devise their own strategies for and manners of music interactions may lead to deeper or longer lasting schema development. Alternatively, informal and noncurricular inclusion of unfamiliar music styles in the school environment (e.g., background music or music during class changes) may result in better memory retention. Because such interactions would be outside the formal curriculum, these types of music listening experiences could take place across a considerably longer span of time.

The establishment of schemata that facilitate memory for music may occur late in the learning process. Other cognitive tasks, such as paired same–different discriminations or identification of pitch center, may be more sensitive to early stages of music learning. Likewise, one's ability to simply imitate an unfamiliar musical style may be an early indicator of familiarity (Morrison, Treviño, & Sielert, 2008), although it is not clear whether such imitation can be construed as style-specific knowledge. Elsewhere (Demorest & Morrison, 2003), it has been suggested that listeners may attempt to “accommodate” culturally unfamiliar music styles through imposition of familiar organizational strategies (for example, interpreting a traditional Chinese scale as Western pentatonic). It may follow that one must first unlearn inappropriate strategies before gaining fluency with a new musical system, particularly in cases where two systems appear to share a number of surface similarities (cf. Fung, 1996). This employment of adaptive strategies in the encoding process may in fact interfere with the ability to recognize previously encountered material on its own terms.

It also may be that encounters with unfamiliar music are treated episodically, as instances of specific series of musical events occurring in a particular context. This is in contrast to music—even novel music—of a familiar style for which a listener could quickly get the “gist” (Agres & Krumhansl, 2008) on the basis of a reasonably informed prediction of what will happen next (Huron, 2006). Such generalizability based on a broad “feeling of familiarity” has been observed to aid recall of melodies (McAuley, Stevens, & Humphreys, 2004). Even in cases where listeners were exposed to an unfamiliar and artificial musical grammar, they were able to identify previously heard pieces as more familiar compared to pieces constructed from a different grammar (Loui et al., 2010). Our results suggest that this familiarity does not extend to the

point of remembering specific excerpts from among others composed using the same rule system. One may speculate that students' interactions with culturally unfamiliar music may more quickly lead to a general sense of style or a recognition of common patterns rather than retention of specific melodic constructions or other structural details.

Listeners also have demonstrated better memory for novel music in cases where the music was rated very positively (Eschrich, Münte, & Altenmüller, 2008). However, more positive responses to culturally unfamiliar music have been limited to either specific songs (Shehan, 1985) or Westernized versions of world music selections (Demorest & Schultz, 2004). Although the curriculum employed in this particular study could barely begin to reflect the extensive entirety of the Turkish music tradition, it was to every degree possible representative of different significant music styles and genres common to Turkish culture. A more intensive focus on a very few music selections might effect more pronounced improvement in memory performance, perhaps analogous to Shehan's (1985) results relating to preference. However, it may be argued that such specific results would still contrast with more generalizable memory success among novel but culturally familiar examples. It appears that the effect of enculturation on music memory is well established early in life and resistant to modification even through extended instructional approaches.

On a methodological level, the consistency of these results with those reported previously suggests that this particular measure is appropriate for use among fifth-grade students. Memory scores showed clear discrimination between the two music styles. Perhaps more importantly, it is now possible for us to generalize earlier findings suggesting the existence of an enculturation effect on music memory to another, younger population. Additional research is needed to determine the earliest age at which music memory differs along cultural lines and how memory may relate to other measures of culturally specific music tasks.

On a pedagogical level, these findings suggest that there may be significant differences in how students of different cultural backgrounds process musical information. This has implications for developing appropriate curricular expectations when asking students to demonstrate "basic analyses of works of art from a structural, historical and cultural perspective" (Consortium of National Arts Education Associations, 1994, p. 19). Does this mean simply that students interpret the music of other cultures comparatively through the lens of their own—in this case, Westernized—understanding of music? And what of students from different cultures who are being educated in the United States? To what extent might this require adjustment of the expectations for such students regarding understanding of Western music? Perhaps this latter question is less problematic given the success of Western art and popular music as a cultural export; nevertheless, it is worth our contemplation. Both researchers and teachers who employ the music of various cultures must carefully consider the cultural background of the participants in the design and implementation of any musical interaction.

In linking these findings to the general music classroom, one must not dismiss the value of an immersive unit based on a particular musical culture—particularly with

regard to the potential for developing musical skills and cultural understanding through music (Campbell, 2004; Schippers, 2010). Although in this study, student memory for an unfamiliar musical culture did not improve, students were offered opportunities for exploring certain sonic and structural concepts of music, for developing listening and literacy skills, and for become acquainted with music and musicians from a culture distant and distinctive from their own. Classroom music teachers may be less concerned with the potential of world music pedagogy for developing a sense of “bimusicality” among students and may focus more on those learning outcomes that were not the focus of this investigation.

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References

- Abril, C. R. (2006). Learning outcomes of two approaches to multicultural music education. *International Journal of Music Education, 24*, 30–42. doi:10.1177/0255761406063103
- Agres, K. R., & Krumhansl, C. L. (2008). Musical change deafness: The inability to detect change in a non-speech auditory domain. In B. C. Love, K. McRae, & V. M. Sloutsky (Eds.), *Proceedings of the 30th annual conference of the cognitive science society* (pp. 975–980). Austin, TX: Cognitive Science Society.
- Brittin, R. (1991). The effect of overtly categorizing music on preference for popular music styles. *Journal of Research in Music Education, 39*, 143–151. doi:10.2307/3344694
- Campbell, P. S. (2004). *Teaching music globally*. New York, NY: Oxford University Press.
- Chan, J. C. K., & McDermott, K. B. (2007). The testing effect in recognition memory: A dual process account. *Journal of Experimental Psychology: Learning, Memory, and Cognition, 33*, 431–437. doi:10.1037/0278-7393.33.2.431
- Consortium of National Arts Education Associations. (1994). *National standards for arts education*. Reston, VA: MENC.
- Demorest, S. M., & Morrison, S. J. (2003). Exploring the influence of cultural familiarity and expertise on neurological responses to music. *Annals of the New York Academy of Sciences, 999*, 112–117. doi:10.1196/annals.1284.011
- Demorest, S. M., Morrison, S. J., Beken, M. N., & Jungbluth, D. (2008). Lost in translation: An enculturation effect in music memory performance. *Music Perception, 25*, 213–223. doi:10.1525/mp.2008.25.3.213
- Demorest, S. M., Morrison, S. J., Beken, M. N., Stambaugh, L. A., Richards, T. L., & Johnson, C. (2010). An fMRI investigation of the cultural specificity of music memory. *Social Cognitive and Affective Neuroscience, 5*, 282–291. doi:10.1093/scan/nsp048

- Demorest, S. M., & Schultz, S. J. M. (2004). Children's preference for authentic versus arranged versions of world music recordings. *Journal of Research in Music Education*, 52, 300–313. doi:10.1177/002242940405200403
- Eerola, T., Himberg, T., Toiviainen, P., & Louhivuori, J. (2006). Perceived complexity of Western and African folk melodies by Western and African listeners. *Psychology of Music*, 34, 337–371. doi:10.1177/0305735606064842
- Eschrich, S., Münte, T., & Altenmüller, E. (2008). Unforgettable film music: The role of emotion in episodic long-term memory for music. *BMC Neuroscience*, 9, 48. doi:10.1186/1471-2202-9-48
- Fung, C. V. (1996). Musicians' and nonmusicians' preferences for world musics: Relations to musical characteristics and familiarity. *Journal of Research in Music Education*, 44, 60–83. doi:10.2307/3345414
- Hannon, E. E., & Trehub, S. E. (2005a). Metrical categories in infancy and adulthood. *Psychological Science*, 16, 48–55. doi:10.1111/j.0956-7976.2005.00779.x
- Hannon, E. E., & Trehub, S. E. (2005b). Tuning in to musical rhythms: Infants learn more readily than adults. *Proceedings of the National Academy of Sciences of the United States of America*, 102, 12639–12643. doi:10.1073/pnas.0504254102
- Huron, D. (2006). *Sweet anticipation: Music and the psychology of expectation*. Cambridge, MA: MIT Press.
- Loui, P., Wessel, D., & Hudson Kam, C. (2010). Humans rapidly learn grammatical structure in a new musical scale. *Music Perception*, 27, 377–388. doi:10.1525/mp.2010.27.5.377
- Lynch, M. P., & Eilers, R. E. (1991). Children's perception of native and nonnative musical scales. *Music Perception*, 9, 121–131. Retrieved from <http://www.jstor.org/stable/40286162>
- Lynch, M. P., & Eilers, R. E. (1992). A study of perceptual development for musical tuning. *Perception and Psychophysics*, 52, 599–608. doi:10.3758/BF03211696
- Macmillan, N. A., & Creelman, C. D. (1991). *Detection theory: A user's guide*. Cambridge, MA: Cambridge University Press.
- McAuley, J., Stevens, C., & Humphreys, M. S. (2004). Play it again: Did this melody occur more frequently or was it heard more recently? The role of stimulus familiarity in episodic recognition of music. *Acta Psychologica*, 116, 93–108. doi:10.1016/j.actpsy.2004.02.001
- McKoy, C. L. (2004). Effects of instructional approach on preferences for an untaught selection of indigenous folk music of Ghana. *Bulletin of the Council for Research in Music Education*, 159, 33–45.
- Morrison, S. J., Demorest, S. M., & Stambaugh, L. A. (2008). Enculturation effects in music cognition: The role of age and music complexity. *Journal of Research in Music Education*, 56, 118–129. doi:10.1177/0022429408322854
- Morrison, S. J., Treviño, A. R., & Sielert, V. (2008). Jazz expertise and its relationship to pitch and rhythm placement among trumpet players. *Bulletin of the Council for Research in Music Education*, 175, 31–41. Retrieved from <http://www.jstor.org/stable/40319411>
- Nan, Y., Knösche, T. R., Zysset, S., & Friederici, A. D. (2008). Cross-cultural music phrase processing: An fMRI study. *Human Brain Mapping*, 29, 312–328. doi:10.1002/hbm.20390

- Pembrook, R. G., & Robinson, C. R. (1997). The effect of mode of instruction and instrument authenticity on children's attitudes, information recall, and performance skill for music from Ghana. *Bulletin of the Council for Research in Music Education*, 133, 115–120.
- Price, H. E. (1988). The effect of a music appreciation course on students' verbally expressed preferences for composers. *Journal of Research in Music Education*, 36, 35–46. doi:10.2307/3345012
- Roberts, J. C. (2011). Talkin' Turkey: Incorporating music from Turkey in the elementary general music class. In A. Clements (Ed.), *Alternative approaches in music education: Case studies from the field* (pp. 151–160). Reston, VA: MENC.
- Schippers, H. (2010). *Facing the music*. New York, NY: Oxford University Press.
- Shehan, P. K. (1984). The effect of instruction method on preference, achievement, and attentiveness for Indonesian gamelan music. *Psychology of Music*, 12, 34–42.
- Shehan, P. K. (1985). Transfer of preference from taught to untaught pieces of non-Western music genres. *Journal of Research in Music Education*, 33, 149–158. doi:10.2307/3344802
- Wong, P. C. M., Roy, A. K., & Margulis, E. H. (2009). Bimusicalism: The implicit dual enculturation of cognitive and affective systems. *Music Perception*, 27, 81–88. doi:10.1525/mp.2009.27.2.81
- Yarbrough, C., & Price, H. (1987). The effect of instruction and repeated listening on behavioral preference, behavioral intent, verbal opinion, and ratings of familiarity and complexity. *Update: Applications of Research in Music Education*, 5(2), 6–9.

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