

Music in the Home: New Evidence for an Intergenerational Link

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Abstract

This study had three goals: (1) to investigate the potential connection between music experiences in early childhood and later music making as a parent, (2) to report the frequency of music making in a sample of American families with young children along with parents' opinions on possible benefits of music classes, and (3) to compare frequency data to two previous studies. Parents of 4-year-old children were surveyed on the frequency of music activities in the home, their early arts experiences, and a variety of topics concerning arts education. An intergenerational link was found: The frequency of parental song in childhood significantly predicted parents' later music behaviors with their own children, adjusting for other aspects of the early artistic environment. Parents reported high frequencies of music activities in the home, with most parents singing or playing recorded music to their children on a daily basis. Notably, the frequency of parental music making was unrelated to family income or to participation in music classes. Parents' opinions on the effects of music education reflected a widespread belief that music classes confer a variety of nonmusical benefits.

Keywords

family music, early childhood, song, parenting

Music educators have expressed concern that in recent history, the quality of the young child's home musical environment has declined (e.g., Feierabend, 1996; Gembris & Davidson, 2002; Papoušek, 1996), but evidence for this trend is limited. Six studies (Custodero, Britto, & Brooks-Gunn, 2003; Custodero & Johnson-Green,

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2003; de Vries, 2009; Ilari, 2005; Youm, 2013; Young, 2008) quantitatively document the frequency of parents' music making with varied results, but differences in their findings may be attributable to differences in the ages, locations, and demographics of children involved. Only two report on American families, with data collected over a decade ago: in 1996 by Custodero et al. (2003) and in 2000 by Custodero and Johnson-Green (2003). To date, no analyses directly comparing frequency data have been published; thus, the degree to which the home musical environment has changed in recent years, whether positively or negatively, is not yet known.

A link between childhood music experiences and later parental music making has been proposed by music educators (e.g., Gordon, 1997; Kodály 1963/1989); but few studies have tested this possibility empirically. Custodero and Johnson-Green (2003) found a significant association between being sung to by a parent in childhood and the frequency of singing to one's own child, but Ilari (2005) found no corresponding relationship between mothers' music experiences and the frequency of parental song. A caveat against the evidence for such a link is the possibility that parents who were frequently sung to as children also had other early advantages, such as exposure to music classes or a generally enriched artistic environment, which later led them to sing more to their own children. No published study has controlled for this potential confound.

American families participate in a wide variety of early childhood music programs, many of which are designed to improve the quality of the home musical environment (for review, see Flohr, 2005). A recent large-scale survey of American adults reported 88% agreement with the statement, "Participating in school music corresponds with better grades/test scores" (National Association of Music Merchants, 2011, p. 175); thus, parents' reasons for participating may include the belief that music classes enrich not only children's musical development but also areas of cognition unrelated to music.

The current study has three goals: (1) to investigate the existence and extent of an intergenerational link in the music of childhood and the music of parenthood, (2) to report data on the frequency of parental music behaviors in a sample of American families with young children along with parents' opinions on the potential nonmusical benefits of music education, and (3) to conduct an analysis comparing current frequency data to two previous studies.

Method

Participants

Families with 4-year-old children were recruited through a lab database and via flyers offering "free creative arts classes" throughout the Boston area, for two longitudinal studies on the cognitive effects of arts education (Mehr, Schachner, Katz, & Spelke, 2013). Approximately 90 parents responded, of which 78 were invited to participate in the study. To qualify, children could not be attending a music class already and a professional musician could not be living at home with the child. Families were randomly assigned to music ($n = 38$), visual arts ($n = 14$), or no classes ($n = 22$). Following a

period of weekly instruction, parents were surveyed on their childhood arts experiences, the frequency of music activities in the home, and opinions on possible nonmusical benefits of children's music classes. Four families discontinued participation in the study before completing the survey, for a 5.1% rate of attrition. Parents previously had completed a demographic questionnaire and the Advanced Measures of Music Audiation (AMMA), a test of stabilized music aptitude (Gordon, 1989).

Sample characteristics are presented in Table 1. The sample was notably higher income than the surrounding area: The 2010 median yearly income in Middlesex County, Massachusetts, was \$77,377 (U.S. Census Bureau, 2012), while the median yearly income of the current sample was \$130,000. The distribution of ethnicities differed significantly from that of Middlesex County, $\chi^2(5) = 15.41, p = .0087$; this difference was driven by the sample's lower-than-expected percentage of African American families (sample, 1.4%; Middlesex County, 4.7%) and higher-than-expected percentage of Asian American families (sample, 12.9%; Middlesex County, 9.3%; U.S. Census Bureau, 2012).

Instrument

The survey was administered via paper and pencil during a battery of child cognitive assessments. Parents accompanied their children to these assessments and responded while observing their children. Extra time was provided when necessary. The survey included 65 Likert-type items on two 7-point scales. The frequency scale included seven possible numerical responses: (1) *almost never*, (2) *monthly*, (3) *weekly*, (4) *every 2 to 3 days*, (5) *daily*, (6) *more than once a day*, and (7) *many times a day*. The agree/disagree scale included seven possible numerical responses ranging from (1) *strongly disagree* to (4) *neutral* to (7) *strongly agree*, in 1-point increments. In both cases, parents circled a number to record their responses. Twelve items used the frequency scale and the remaining 53 used the agree/disagree scale.

Items were presented in one of four randomized orders. Items on the frequency scale concerned the frequency of parents' music- and visual arts-related behaviors with their own children as well as with their own parents when they themselves were young children. Of these, three were comparable to items in de Vries (2009): "How often do you sing with your child?" "How often do you listen to recorded music with your child?": and "How often do you play musical instruments with your child (either homemade or store-bought)?" Two were comparable to items in Custodero and Johnson-Green (2003): "How often do you sing with your child?" and "How often do you listen to recorded music with your child?": with only minor changes in wording. Items on the agree/disagree scale concerned a variety of opinions about music and visual arts in childhood (e.g., "It's important to me that my child is interested in music when he/she grows up.") as well as control items designed to verify responses on the frequency scale (e.g., "I sing with my child all the time."). Distractor items on each scale were included to mask the survey's overall intent, with the goal of reducing response biases (e.g., "How often do you look at illustrated books with your child?" on the frequency scale, and, "I know my child's favorite color[s] on the agree/disagree scale."). Forty-eight such distractor items were included, far outnumbering the 17

Table 1. Characteristics of Sample.

Characteristic	<i>n</i>	% of sample
Gender		
Child (female)	34	46.0
Parent (female)	64	86.5
Ethnicity		
African or African American	1	1.41
Asian or Asian American	9	12.7
European or White American	54	76.1
Hispanic or Latino American	4	5.63
Native American	1	1.41
Other	1	1.41
Parent education level		
Some college	6	8.11
Bachelor's degree	23	31.1
Master's degree	29	39.2
Professional degree or more	16	21.6
Family income		
\$21,000–\$60,000	7	9.46
\$61,000–\$100,000	11	14.9
\$101,000–\$140,000	26	35.1
\$140,000–\$180,000	13	17.6
\$181,000–\$220,000	10	13.5
\$221,000 or more	7	9.46
Children attending preschool	70	94.6
Bilingual children	28	37.8
	Mean	Standard Deviation
Age at time of survey completion, in years		
Child	4.73	0.304
Parent	39.2	4.09
Parent's raw AMMA score	53.7	6.85
Parent's total work hours per week	34.4	9.96
Number of children per family	1	—

Note: AMMA = Advanced Measures of Music Audiation (Gordon, 1989).

items relevant to the current report; given that the order of questions was randomized, this made it unlikely that parents could determine the study's goals. Two research assistants independently coded the surveys and no discrepancies were found.

Results

Wilcoxon-Mann-Whitney tests revealed no group differences (i.e., between those parents who had participated in music classes vs. visual arts classes vs. no classes) on any survey responses ($ps > .05$); thus, results are reported from the entire sample.

Relation Between Early Experiences and Parental Singing

Responses to each of the four items on parents' early experiences ("When you were little, how often did your parents sing to you?" "When you were little, how often did your parents do art projects with you?" "When you were little, how often did you go to music classes?" and "When you were little, how often did you go to art classes?") were compared to responses to the 61 other survey items; thus, analyses were conducted at the adjusted alpha level of $p = .0008$, after a Šidák correction for multiple comparisons.

The first key finding was that the frequency of parents' early experiences with song was significantly correlated with the frequency of singing in the home, in the predicted direction: Responses to "When you were little, how often did your parents sing to you?" were correlated with responses to "How often do you sing with your child?" ($r = .40, p = .0005$). To enable an effect size comparison between the current results and those of Custodero and Johnson-Green (2003), their main effect was converted to r using the method of Rosenberg (2010), yielding an effect size of $r = .124$. Thus, the predictive effect of parents' childhood experiences of song on their later music parenting behaviors may be substantially larger than previously reported.¹

The second key finding was that this correlation was unique: Three control items, "When you were little, how often did your parents do art projects with you?" "When you were little, how often did you go to music classes?" and "When you were little, how often did you go to art classes?" were not significantly correlated with the frequency of singing in the home ($ps > .1$). If an intergenerational link for parental singing arose as a consequence of generally positive aspects of the home environment, the frequency of singing in the home likely would have correlated with measures of such positive aspects. This was not the case.

Ordinal logistic regression was used to examine the adjusted relationships between the predictors of interest and the ordered outcome variable, "How often do you sing with your child?" To begin, an ordinal regression treating the 7-point predictor variable "When you were little, how often did your parents sing to you?" as a nominal variable (entered into the model as six dummy variables) was compared to the ordinal regression treating the same predictor as an interval variable. A nested model comparison revealed that the two models did not differ significantly, $\chi^2(5) = 9.39, p = .094$. Thus, analysis proceeded with the latter model, treating that predictor as a single interval variable. At the Šidák-adjusted alpha level of $p = .0008$, the model significantly predicted responses to "How often do you sing with your child" from the four predictor items, $\chi^2(4) = 29.8, p < .0001$, but only the variable "When you were little, how often did your parents sing to you?" had a significant partial effect (odds ratio = 2.13; 95% confidence interval = [1.56, 2.89]; $z = 4.82, p < .0001$). This result indicates that the predictive effect of parents' early experiences with song on frequency of singing with their children held when controlling for the three other measured aspects of the parents' early artistic environment. Sensitivity analyses revealed that none of the effects described earlier was attributable to the presence of influential observations.

Frequency and Opinion Items

Parents reported high frequencies of participation in music activities, especially with respect to singing and listening, as opposed to playing instruments or attending concerts (see Table A in the Appendix, available online at <http://jrme.sagepub.com>). They tended to agree with statements supporting the existence of positive, causal effects of children's music classes. On the agree/disagree rating scale, wherein *neutral* was indicated by a 4 and levels of agreement were indicated by ratings 5 through 7, respondents were overwhelmingly in agreement with statements indicating that music classes improve children's school performance (90%), make young children smarter (74%), and help children play well with each other (71%) (see Table B in the Appendix, available online at <http://jrme.sagepub.com/supplemental>).

Wilcoxon sign tests revealed that parents' responses on all items were significantly below ceiling ($ps < .0001$). No significant relationships were found between any question on either scale and ethnicity, family income, parent's education level, parent's number of hours worked per week, or parent's AMMA score ($ps > .05$).

Comparison to Previous Studies

To enable a direct comparison of parents' responses to the three survey items in common with de Vries (2009) and the two in common with Custodero and Johnson-Green (2003), the current scale was adapted from a 7-point to a 4-point scale, because the scale used in the aforementioned studies had four possible responses: *never*, *once a week or less*, *more than once a week but not daily*, and *daily*. Responses on the current 7-point scale were grouped into these four categories as follows: *never* (Response 1, *almost never*), *once a week or less* (Responses 2, *monthly*, or 3, *weekly*), *more than once a week but not daily* (Response 4, *every 2 to 3 days*), or *daily* (Responses 5, *daily*; 6, *more than once a day*; or 7, *many times a day*). Parents reported significantly more frequent music behaviors than those in de Vries for singing, $\chi^2(3) = 81.6, p < .0001$; playing recorded music, $\chi^2(3) = 73.9, p < .0001$; and playing instruments, $\chi^2(3) = 11.8, p = .0082$. In contrast, parents' reports were comparable to Custodero and Johnson-Green for both singing, $\chi^2(3) = 1.51, p = .678$, and playing recorded music, $\chi^2(3) = 4.91, p = .179$. These findings are summarized in Table 2. Custodero and Johnson-Green did not report parents' frequency of playing musical instruments in the home.

Discussion

The current report shows a connection between being sung to *by* a parent and singing to one's child *as* a parent, a finding that holds when controlling for three other aspects of the parent's early artistic environment. This helps to rule out the possibility that parental singing in childhood is simply a bellwether for a generally advantageous upbringing, which in turn predicts parents' music behaviors with their own children. If that were the case, other aspects of parents' childhood experiences likely also would predict the frequency of parental music behaviors; they do not. This main finding replicates and builds on the findings of Custodero and Johnson-Green (2003), who

Table 2. Comparison of Frequency Questions to Previous Studies.

Question	Frequency (converted to 4-point scale)				Comparison to previous studies (χ^2)	
	Never	Once a week or less	More than once a week, but not daily	Daily	de Vries (2009)	Custodero & Johnson-Green (2003)
How often do you sing with your child?	3%	11%	16%	<u>70%</u>	81.6**	1.51
How often do you listen to recorded music with your child?	3%	15%	11%	<u>72%</u>	73.9**	4.91
How often do you play musical instruments with your child (either homemade or store-bought)?	20%	<u>42%</u>	24%	14%	11.8*	—

Note: Median responses are underlined.
 * $p < .01$. ** $p < .0001$.

reported a similar effect of smaller size, but is in contrast to Ilari (2005), who reported no association between mothers’ music experiences and the frequency of parental song.

An important caveat for this main finding is its reliance on parent self-reports. Parents reported the *perceived* frequency of arts experiences in their childhood, but given the demands and constraints of human memory, it is possible that these frequencies were over- or underestimated. Additionally, parents may have been subject to a social desirability response bias (for discussion, see Krosnick, 1999) and thus overestimated the frequencies of “good” parenting practices in general (either their own practices or those of their parents). While neither of these issues can be ruled out, their potential impact on the main finding is mitigated by two elements of study design. First, the survey was designed to minimize response bias by masking the overall intent of the study (see Method): Parents reported responses on a wide variety of items related to early childhood, many of which were unrelated to either their own early experiences or their parenting practices (e.g., for agree/disagree, “Anyone can be good at visual art if they work hard.”), reducing the likelihood that they were aware of the intention to test a relationship between their early experiences and their behaviors as parents. Second, four separate items assessed parents’ early experiences; given parents’ naivety to the study’s goals, one can reasonably predict that response biases and/or inaccuracies in memory would be distributed randomly across responses to all four items, as opposed to being concentrated in responses to a single item. However, regression analysis revealed that only a single item, “When you were little, how often did your parents sing to you?” had a significant partial effect on the frequency of parental singing. Thus, while the accuracy of self-reports remains a concern, elements of study design and data analysis likely reduce its potential impact on the overall findings.

Future studies could mitigate this issue further by collecting additional data to corroborate parent self-reports, such as direct observations of parent–child interactions or interviews with grandparents.

The current report suggests that parents engage in music behaviors with their preschool-age children on a daily basis and tend to agree with positive statements on the existence of transfer effects from participation in music classes, in the domains of intelligence, academic achievement, and social development. The frequency of parents' music behaviors in the current sample was compared to two previous studies, with two different results. Parents in the current sample reported more frequent music behaviors than those in de Vries (2009) but comparable levels to those in Custodero and Johnson-Green (2003).

However, due to differences in sampling, it is difficult to generalize from these between-study comparisons. De Vries's (2009) data were collected from Australian families with preschoolers, Custodero and Johnson-Green's (2003) data were collected from middle-income American families with infants, and the current data were collected from upper income American families with preschoolers. These marked differences in sampling limit inferential power; for example, one possible interpretation of the differences between de Vries and Custodero and Johnson-Green is a developmental trend toward less parental song as children reach preschool. The current report would seem to be a counterexample to this interpretation, but because the samples differ in a variety of ways (e.g., geographic location), it cannot be ruled out. Additionally, the frequency data are susceptible to social desirability response bias, more so than the data on parents' early music experiences, as the relevant survey items were administered without controls in both previous studies and the current report (notably, current responses to frequency questions were significantly below ceiling; see Results).

A comparison to previous studies does yield one preliminary finding: a lack of association between family income and the frequency of parental music making. Given that income is associated positively with parent–child playing and book reading (Britto, Fuligni, & Brooks-Gunn, 2002), it seems plausible that higher-income families also might sing more with their children. The current data do not support this idea, consistent with one previous report (Custodero et al., 2003). Further, the mean income in Custodero and Johnson-Green's (2003) sample was far less than in the current sample, yet the response patterns to frequency questions are comparable. These results provide no evidence for a connection between income and frequency of parental music making. A related topic is the potential impact of ethnicity, culture, or religious background; this area is ripe for investigation, given the implicit cultural aspects of song (e.g., Trehub, 2000). Unfortunately, the current sample was not sufficiently large or diverse to enable between-groups analyses of parents from different ethnic groups. Interpretation of comparisons across studies by ethnicity is also limited, for the reasons detailed earlier.

Several results pertaining to music education are surprising. First, participation in a music class did not predict the frequency of any type of music behavior. This may be an indication that music classes for parents and young children improve the quality of

parental singing and diversity of song repertoire while not actually increasing the amount of time spent making music at home. For instance, it is possible that a “critical mass” of time already is spent on music in the typical American family, such that music education experiences might improve the quality of in-home music activities without simultaneously increasing their quantity. Second, parental music aptitude, as measured by the AMMA, did not predict the frequency of any type of music behavior. This is consistent with the preceding interpretation of the previous finding: Parents’ general skill and comfort with singing, which likely would be associated positively with both music aptitude and participation in music classes, does not seem to be related to the frequency of music behaviors in the home. Third, parents’ opinions on the causal effects of music classes reflect similar views to those of American adults in general (National Association of Music Merchants, 2011), a widespread belief that music lessons confer a variety of cognitive benefits in domains unrelated to musical development. These opinions were pervasive: rates of agreement were comparable across families, independent of current participation in music or art classes and of socioeconomic status.

With the inclusion of new control measures, the current report provides evidence for the existence of an intergenerational link in family music making, supporting the implicit basis of Zoltán Kodály’s view, “Music education has to be started nine months before the birth of a child” (Ittész, 2004, p. 137), and later, “it would be much better to start nine months before the parents’ birth” (Kodály, 1963/1989, p. 115). Music educators can be gratified to find that many families sing and play music with their preschool children on a daily basis. It is premature, however, to conclude that claims of a decline in parental music making in the United States are false, given socioeconomic and demographic differences between the current sample and the national population. Future work may remedy this issue by gathering data from larger samples with families of many cultures and children of all ages.

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Note

1. L. Custodero (personal communication, December 17, 2012) generously shared data from Custodero and Johnson-Green (2003) to enable this calculation.

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