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THE EFFECTS OF GENDER ON CHILDREN'S MUSICAL INSTRUMENT CHOICES: A REVIEW OF THE LITERATURE

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"Music critic George Upton (1886) reasoned that women's inability to be creative in music is obvious, because history shows they have written no great music and - 'having equal advantages with men, they have failed as creators. '" (Upton, 1886, p. 22, cited by Stremikis, 2002, p. 86).

If one young girl decides that she should not play drums, or if one young boy thinks that he ought not to play the flute, their choices do not necessarily signal that something is amiss. Probably, these are individual decisions and no cause for concern. Imagine though, that most young girls think they ought not to become drummers, nor most boys flautists. If a student has chosen an instrument that she feels she should play, or more importantly, avoided an instrument that she thinks she should not play—based on what girls and boys "should" do—what are her chances of truly enjoying her music study, or staying with it for any significant amount of time? Are societal conventions inhibiting self-fulfilment?

INTRODUCTION

Reviewing articles published over the past 25 years demonstrates some hope that we may be able to diminish the effects of gender bias in music study. The most likely method for change appears in the form of efforts to provide counterstereotyping examples for reticent girls and boys. Educators may play the strongest role in influencing decisions students make about what instrument to play. Educators may also witness the influence that intervention has on students' continued enjoyment of this musical outlet. Such observations might shed light on other domains of gender equality.

STUDIES OF MUSIC CHOICE

Much investigation has been conducted worldwide on gender and its effect on music study choices. Most of the current research owes a great debt to Abeles and Porter's (1978) "The Sex-stereotyping of Musical Instruments" and Delzell and Leppla's (1992) "Gender Associations of Musical Instruments and Preferences of Fourth Grade Students for Selected Instruments." Both studies found empirical evidence that the role gender plays in music study choice is a critical one. Further, Abeles and Porter (1978) placed eight instruments on a scale comparing the instruments' perceived appropriateness for male or female players, as indicated by the ratings of their participants. From the "most feminine" to the "most masculine" these instruments were: flute, violin, clarinet, 'cello, saxophone, trumpet, trombone, and drum (Abeles & Porter, 1978, p. 68). Fourteen years later, Delzell and Leppla (1992) confirmed the same gender associations were being made, but perhaps were not as firmly held as in the past.

Table 1

Masculinity-Femininity Ratings of Instruments Across Studies

Mayer Abeles & Porter Abeles & Porter Delzell & Leppla Pickering & Repacholi %

female instrument masculinity masculinity control group teachers assignment scores

scores k-boys k-girls 4-boys 4-girls

flute	0.0	0.0	12%	0% violin	0.8	46% 19%	
clarinet	80/0	1.9	0.8 cello	N	2.6	1.3	0%
	0% saxophone		32	2.3	8% trumpet	3%	33
	2.4	19%	0% trombone		2.7	0%	0%

drums6%42 3.019% 35% 19% sources:adapted from Zcrvoudakes & Tanur (1994), PICkering &

Repacholi (2001 (2001))

Mayer: survey of female teachers to determine what instruments they teach

Abeles & Porter (instrument assignment): gender associations with instruments (F female; N neutral; M male.)

Abeles & Porter, Delzell & Leppla (masculinity scores): musician self-ratings, specific to instruments in chart, score range 0-5, with 0 feminine, 5 masculine

Pickering & Repacholi: kindergarten and grade 4 students' first choices of insüuments after demonstration (the control students saw and heard instruments but saw no performer).

As they so often do, the conclusions in these studies lead to more questions than answers. I have been a drummer for nearly thirty years and a music teacher for twenty years, and my original interest was to investigate why there has been, and still is, a dearth of female drummers. It turns out that girls do play drums when they are young. What I want to find out is what changes for females between early and late adolescence that causes most of them to shun drums. In my experience, boys still prefer to play the rock instruments (electric guitar, bass, and drums), and everyone, regardless of gender and age, expects boys to fulfil this stereotype.

Another aspect of these studies points to an apparent learned inflexibility in boys with regard to their ideas about what instruments are appropriate for boys and girls to play. The question of this inflexibility is an interesting one. What factors are there that force these limits on boys but appear to leave earlyadolescent girls in a better position to make gender-inconsistent choices? The answer to these questions is likely beyond the scope of studies exclusively related to music study choices, but these studies do seem to represent a credible starting point for such an investigation.

"Gender-appropriate" or "gender-consistent" instruments, as cited in each of these studies, indicates instrument choices consistent with both the author's and others' previous findings of what instruments children and adults generally ascribe as appropriate for a particular gender. Thus, a girl's choice of flute, an instrument rated on the feminine end of the scale, is indicated as gender-consistent while her choice of drums is gender-inconsistent.

Some of the recurring themes from these studies conducted over the past 25 years include:

- confirmation that gender-stereotyping in music continues; • examinations of trends in children's musical instrument choice as determined by instrument characteristics; • assessments of the self-image of the studies' participants and its effect on instrument choice; • the effect of parents, peers, and other role models in informing students' instrument choice; and
- the great responsibility of music teachers in reducing gender associations with musical instruments.

Each of the studies provided clear examples that there is continued gender-stereotyping of musical instruments, and all cite Abeles and Porter as the benchmark report. Delzell and Leppla (1992), Sinsel, Dixon, and Blades-Zeller (1997), and Pickering and Repacholi (2001) specifically sought evidence of Abeles and Porter's findings in their own countries and decades. Each study confirmed that masculine sex-typed students still preferred masculine-stereotyped instruments and that female sextyped students still preferred female-stereotyped instruments. Sinsel, Dixon, and Blades-Zeller also found that androgynous students preferred neutral instruments. Zervoudakes and Tanur cite a study by Davis (1978) in which investigators surveyed members of the four orchestral sections (strings, brass, woodwinds, and percussion) to determine their images of the players from other sections. The data from focus groups found that while string players perceive brass players as "' slightly oafish and uncouth,' 'loud-mouthed and coarse,' and 'liking to be in the limelight',"' brass players see string players as "'oversensitive and touchy,' 'weaklings', and 'precocious'" (Davies, 1978, p. 202203, cited by Zervoudakes & Tanur, 1994, p. 60). Zervoudakes and Tanur conclude "one does not have to stretch one's imagination too far to see the characterization of the brasses as a negative masculine stereotype and of the strings as a negative feminine one" (1994, p. 60).

Harrison and O'Neil (2003) were most concerned with establishing patterns in children's judgements about other children's preferences. They found that both boys and girls preferred gender-consistent instruments, boys expected other children to share their own preferences and girls expected the same of other girls (Harrison & O'Neill, 2003, p. 396). Notably though, girls in the fourth grade, only, were more likely to regard another child's actual preferences and combine that observation with that other child's gender to make decisions about further preferences that child might have. The fourth-grade girls expected that another's affinity for an instrument was not based solely on gender. This finding is similar to Delzell and Leppla's earlier study (1992). In earlier and later grades, girls placed more emphasis on gender. Across grades, however, boys were rigid in using gender as the sole assessment for other children's potential preferences (Harrison & O'Neil, 2003). The relative flexibility and openmindedness of girls is a recurrent theme in many of these studies and so also surfaces repeatedly in this review.

AESTHETICS QUALITIES AND DIFFICULTY AS INFLUENCES

One possible outcome of all this research is to identify ways to create an atmosphere in which individuals feel free to choose an instrument based solely on that instrument's inherent aesthetic qualities, and not on their own gender. Thus it is dis heartening that the consideration of inherent aesthetic qualities of instruments was under-emphasized in these reports. Conway recorded frequent, vague explanations from students as to why they chose a particular instrument, such as "I just liked the sound (2000, p. 13). Sinsel, Dixon, and Blades-Zeller reported that roughly two-thirds of children indicated disinterest in a particular instrument based on the sound of the instrument, the pitch or timbre of which was either too high or too low for a particular child's tastes (1997, p. 398), but none of these observations was given much weight in the researchers' discussions. An investigation of how sound relates to gender associations might shed some light on how a particular instrument becomes charged with masculine or feminine traits. Pickering and Repacholi (2001) stated once that pitch, timbre, and other aesthetic qualities might be influential in a child's choice, but strangely, that idea seemed to them, as well as to the others, to be insignificant. An instrument's sound played so small a role in Abeles and Porter's study that it was eliminated as a determining factor in instrument choice.

However, as much as the sound of an instrument was ignored in determining its popularity with either boys or girls, researchers noticed that the perceived or actual difficulty in learning an instrument does seem to affect the attractiveness of the instrument. In examining children's satisfaction with music lessons, Rife, Shnek, Lauby, and Lapidus (1998) found that woodwind players were generally happier with their lessons than were the string players, and that gender plays a significant role in children's satisfaction with lessons. Rife et al. suggest that these findings may be due to the difficulties encountered when playing string instruments, which result in slower rates of progress and success than in playing woodwinds. In examining success and satisfaction with instrument study, Legette (1998) found that an instrument's perceived difficulty is more likely to have a negative effect on boys than on girls. He found that girls are more likely to attribute musical success to effort, and thus they are more likely to work harder at difficult instruments and stick with them. Boys appear to attribute musical success to luck, having an "either you get it or you don't" attitude and, and thus are much quicker to abandon a difficult instrument (Legette, 1998, p. 105). Le Blanc and Jin (1999) reported that females enjoy a wider range of styles, especially among the "serious" styles, and that girls are generally better disposed to music than boys.

Most researchers concluded that it is often difficult to ascertain exactly what students think of particular instruments, let alone why they think what they do. Responses to the question of why a student liked or disliked a certain instrument were often because "It's cool" or because "It sucks." Bruce and Kemp (1993) were equally confounded by the kinds of responses their questions garnered. They could find no clear reason for children's perceptions and choices. For example, the trombone was popular with boys and girls, but the researchers could not differentiate the attractiveness of its sound from the instrument's size, its polished appearance, or the characteristic movements of its player as the reason that many students gravitated towards it with great enthusiasm, after a performance.

SELF-IMAGE IN INSTRUMENT PREFERENCES

Self-image, in relation to gender and social roles, also appears to play a significant role in instrument preference. In their Sex Role Inventory, Sinsel, Dixon, and Blades-Zeller (1997) did not ask students directly to assess their gender orientation. However, through a series of questions, each student's orientation was established, and through another series of questions, the same students were found to make gender-consistent choices in the instruments they elected to play. Self-image can also play a role in contradicting stereotyping. In Conway's (2000) study, many of the stereotype-breaking musicians saw themselves as being rebellious in character. Many of those students who were playing gender-inconsistent instruments reported that they chose those instruments in a conscious effort to be different. One female trombone player was quoted as explaining, "Well, I knew that I just didn't want to play the flute. I didn't want to do like every other girl in the grade was [doing]" (Conway, 2000, p. 10). Both Sinsel, Dixon, and BladesZeller (1997) and Conway (2000) found that implicit and explicit self-image was a factor affecting young people's instrument preference. In her study of successful female musicians, Stremikis (2002) observed the explicit self-image as an important factor for older, established musicians. Stremikis noted that successful female musicians took pride in their determination, and that they perceived themselves as highly self-directed and less conforming to gender stereotypes than hobbyists. As might be expected of adult participants, Stremikis' interviewees exhibited a much more socially aware view of gender-stereotyping and its potentially damaging effects.

PARENTAL INFLUENCES

One might expect a parent's role in a student's musical studies to be very important in terms of motivation or the creation of biases. Even on a simpler level, parents often exert their influence in their roles as financial supporters. The one who "pays the piper," or in this case, the piper's teacher, often calls the tune. Abeles and Porter (1978) found that parents have very clear ideas about which instruments are appropriate for which gender and that this greatly influences their children's choices. Conway (2000) also explored parental support with her participants. Though she recognized that parents have a strong impact on their children's choices, this was not necessarily consistent with stereotyping: parents were found to both encourage and discourage continued adherence to gender stereotypes. One female flautist explained "Well, my parents really wanted me to like [sic] play the flute. First it was the violin and I said no so they got me a flute and I started working on it. I actually wanted to play the drums, but they said 'no way"' (Conway, 2000, p. I l). A female tuba player had a different experience: "My mom was with me when I tried the tuba. She thought it was great" (Conway, 2000, p. 10).

Parents, of course, are not found to be singular in their personal and direct influence. Conway (2002) and Pickering and Repacholi (2001) found that parents are not likely as influential as peers or professional musician role models. Most of the articles reviewed agree that peers are a major influence on instrument study, acting either as role models or simply as critics. "Why is such a little girl playing bass?" was a common question from fellow students and parents overheard by one of the student participants in Conway's study (2000, p. 9). The female contrabass player in question was the only female bass player at her school. Pickering and Repacholi thought that "because [the children's] testing was conducted in groups, children may have avoided expressing a preference for certain instruments and/or musicians for fear of being ostracized by peers" (2001, p. 625). Unfortunately, their study did not include individual interviews, which may have produced different results. Thus Pickering and Repacholi could only conclude that it is possible that children are more likely to respond to an example set by their peers than by adults. This is consistent with Abeles and Porter's earlier expectations that peer role models would have a very strong effect on instrument gender associations. To control for this assumption, Abeles and Porter showed pictures to boys and girls of instruments being played by musicians whose gender was obscured. They expected that if a certain instrument was shown being played by a boy, that both boys and girls would associate that instrument with boys only, and vice versa.

ROLE MODELLING

Further, in terms of professional, or at least adult, role models, there is much evidence that role-modelling is a very strong factor in instrument choice. Bruce and Kemp (1993) hypothesized that after seeing a concert in which both males and females performed, boys would prefer masculine instruments when they were played by either gender, but would choose a feminine instrument only when it was played by a male player. They expected girls to have a broader range of instrument selection, but still generally to prefer instruments demonstrated by women. Their hypothesis was supported when the results showed that the attractiveness of the instrument to both boys and girls changed when the gender of the player changed. Even the flute, previously defined as the most feminine of the instruments rated, attracted the boys when a man played it. After the concerts, the children were asked to draw a picture of an instrument they saw. Boys drew boys playing and girls drew girls, but the instruments they chose to depict did not necessarily reflect the instrument they chose to examine after the concert. Interestingly, the majority of boys drew flutes. Bruce and Kemp assume that this is because the flute is easier to draw than the trombone, for example. This idea of boys choosing the easier path is consistent with Legette's (1998) previously cited findings regarding boys' reaction to difficult-to-play instruments.

Reflection on a music teacher's power to affect her student's ideas about music and musical instruments is a theme common to many gender-related music studies. The teacher's potential power is an area that most of the researchers highlight as the best hope for change in gender-related attitudes in music studies. Stremikis' (2002) adult participants repeatedly cited educator and mentor influence as reasons for or against choosing music as a career, often relating negative experiences of gender discrimination. In terms of what instrument to play, once music has been chosen as a pursuit, Sinsel, Dixon, and Blades-Zeller cited Byo (1991) for showing evidence that educators can influence students' choices by "biasing the manner of initial instrument presentation" (Sinsel, Dixon, & Blades-Zeller, 1997, p. 400). Similarly, Pickering and Repacholi (2001) found that children exposed to counter-examples were less likely to choose gender-consistent instruments. In fact, fourth-grade boys were the only ones to display significant preference for genderappropriate instruments even after counter-examples were given. Pickering and Repacholi warned, however, that "counterexamples" run the risk of gender-stereotyping in the opposite direction to that which children are now exposed. On this same theme, they also noted that there is further study needed to determine how long the effects of the counter-examples will last. In some initial investigations, Pickering and Repacholi noted that kindergarten-aged children are less susceptible to counterexamples (i.e. that they hold their gender stereotypes dearer). Boys, because of their general inflexible opinions, may need repeated exposure to counter-examples, if those examples are to have their desired effect. Sinsel, Dixon, and Blades-Zeller also confirmed that boys hold stereotypes more firmly than girls, and thus concluded that boys need more help to broaden their potential musical choices (Sinsel, Dixon, & Blades-Zeller, 1997, p. 400).

Delzell and Leppla (1992) suggested that even though many music teachers are sensitive to issues of genderassociations with musical instruments, many other individuals that the teachers and their students encounter will not be equally sensitive, and so it is the teacher's responsibility to educate those individuals. Costley also asserted that it is a teacher's responsibility to address directly the damaging practices and stereotypes she encounters, such as societal tendencies to judge female instrumental performers by their merits as women rather than simply as artists, and the feeling that "there is an air of immorality about women performers" (Costley, 1993, p. 202).

In terms of gender-stereotyping, most of these studies from the last 25 years concluded that many of Abeles and Porter's 1978 findings were still relevant. However, researchers still seem to be optimistic that efforts to reduce or even remove students' gender associations with musical instruments could prove fruitful. Delzell and Leppla (1992) are confident and encouraged that the popularity of the highly gender-associated instruments is increasing for members of the opposite sex. They attribute this positive shift to the increased sensitivity to stereotyping of policy makers, publishers, and educators. Conway (2000) attributes what changes are afoot to more direct and personal influence than the broader, systemic view adopted by Delzell and Leppla. Conway stated that there is now both pressure to conform and support for individuality in students' choices, and that parents, peers, and teachers can have a liberating effect if they choose to help. She maintained that studying specific cases may be the way to understand more fully what is happening with our children, but she does not conclude her study with any clear method for further study or steps to be taken to ensure that the stereotyping is eliminated

Yet, as noted previously, other researchers overwhelmingly place the responsibility for eliminating stereotyping squarely on the shoulders of music teachers, as music teachers occupy the most obvious platform for making explicit the ideas and biases at work in society and helping their students to find their way past them. To be successful in directing this shift in students' attitudes, teachers will have to use all available resources and appeal to policy-makers for more support. Still, the one method thought to be most effective by these researchers is the manipulation of the presentation of the instruments to students to provide positive and "gender-inconsistent" counterexamples of musical performance and performers.

Thus the music teacher will be responsible for judging a student's character as well as the mood of a whole class, and will need to take appropriate measures for manipulating the presentation of role models. According to Sinsel, Dixon, and BladesZeller (1997), one of the most precise interventions a teacher can make involves the consideration of children's psychological sexrole. They argued that "better student-instrument matches, perhaps giving consideration to gender association and selfidentification, may increase the likelihood of instrument satisfaction among students, which, in turn, could increase retention rates" (Sinsel, Dixon, & Blades-Zeller, 1997, p. 400). Despite coming to their conclusion from a slightly different angle than many of the other researchers, having used the quantitative Sex Role Inventory, Sinsel, Dixon, and Blades-Zeller support the idea that role-modelling may play a positive part in freeing students' choices. They suggested that educators could employ current stereotypes and subvert them so that "across successive generations, gender-based distinctions between musical instruments may become gradually blurred. As a result, stigmas against gender-inappropriate instruments may be lessened, and student retention and instrument balance may be maximized" (Sinsel, Dixon, & Blades-Zeller, 1997, p. 400). Further research in this area could be very beneficial to music teachers in their efforts to match students with appropriate instruments and modify genderstereotyping behaviour.

Pickering and Repacholi believe that genderstereotyping can be modified (see Table 2), but question how long the modification may last. Table 2 shows the results of their instrument demonstration experiment. Though there are differences in student responses between their control, stereotype, and counter-stereotype groups, their sample sizes (27 or 25, depending on which class they used) do not show those differences to be convincing or statistically significant. They concluded that more work needs to be done to examine what lasting effects, if any, can be realized by this exposure to counter-examples. Their paper ends with the challenge that "ultimately, the message that needs to be conveyed to children is that anyone can play these instruments" (Pickering & Repacholi, 2001, p. 642).

Table 2

Proportion of Children Selecting Specific Instruments as a Function of Videotape

	Flute	Violin	Clarinet	Cello	Sax	Trumpet	Trombone
Control							
k-boys 12% 15% 0% 0% 12% 19% k-girls 46% 8% 8% 0% 0% 4th-boys 0% 19% 4% 0% 19% 19% 4%							
4th-girls [a]	15%	30%	7%				0%

Stereotype

k•boys	12%	0%0%	8% k-giris	23%	0%	0%
	8% 4th-boys [a]		4%	0%	0%	22%
4th-girls	8%	39%	8%	8%	8% Counter-stereotype	
k.boys	0%	24% 8%	16%	16%	12% k-girls	7%
	37%	0%	0%	7%	19%	0% 4th-boys
	40/0	8%	4%	4%		
4th-giris 0%					46%	15% 4%

[O]N = 27, [O]N = 25 (the school situation made the use of just one class difficult, so there were two) sources: Based on Pickering & Repacholi. 2001

Bruce and Kemp echo this statement and emphasize that ' 'Instrumental teachers may need to be more aware of the sexstereotyping operating not only within themselves, but also accorded to the instruments they teach. Providing positive role models may help children to see the false reality of their perceptions of instruments, and serve to raise their awareness of discrepancies between actual instrumental qualities and false, stereotyped images" (Bruce & Kemp, 1993, p. 217).

CONCLUSION

In the study of instrumental music in particular, a fruitful, enjoyable, and prolonged relationship with any given instillment is not always a guarantee. Among other factors, it is clear that gender-stereotyping is a major influence on the musical pursuits of both boys and girls. So if, as Pickering and Repacholi (2001) have suggested, we may be able to increase boys' and girls' willingness to break gender stereotypes with repeated exposure to counter-examples and, as Sinsel, Dixon, and BladesZeller (1997) have suggested, we can increase the likelihood of instrument satisfaction among students, it seems to me that we must. For, at the beginning of the 21 st century, how can we possibly justify any notion of gender-appropriate activities? If we cannot destroy this idea in such an abstract domain as music, how can we ever achieve more global and equal opportunity for everyone?

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