MUSICAL INSTRUMENT PREFERENCES: GENDER-IMAGES AND GENDER DIFFERENCES

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ABSTRACT

Background. What makes a musical instrument so attractive for teenagers that they want to play it? The results reported here are part of a larger empirical study on young peoples' choices of musical instruments. This study draws on concepts of gender specific aesthetic choices and preferences and it follows previous research in musical instrument preferences.

Aims. The survey investigates the influence of the musical instruments' sound, their appearance, and of the movement of playing on their attraction for young people. Furthermore, socio-cultural images ascribed to particular instruments are assumed to be important for instrument choice. The hypothesis was that the appeal of a musical instrument varied with the ascribed gender-image.

Method. Young musicians as well as non-musicians were interviewed using a multimedia computer. The study has been carried out by means of the authoring system for multimedia surveys FrAuMuMe. In the course of an audiovisual questionnaire ten musical instruments (saxophone, clarinet, flute, trumpet, trombone, accordion, piano, keyboard, violin and guitar) were presented by the means of sound examples, pictures, and by the means of video sequences showing the instruments being played. 187 12-18 year-olds of different levels of education rated the appeal of sound, appearance and movement of playing of each of the ten musical instruments.

Results. The results showed that girls were more attracted by the musical instruments' sound, appearance and movement of playing the more they perceived it as female while boys were more attracted by the musical instruments' sound, appearance and movement of playing the more they perceived it as male.

1. WHAT MAKES A MUSICAL INSTRUMENT ATTRACTIVE FOR YOUNG PEOPLE?

Many aspects like size, weight, shape, volume, pitch, timbre, appearance, or movement of playing influence individual preferences for certain musical instruments (Scheuer 1988; O'Neill & Boulton 1996; Pickering & Repacholi 2001). Apart from these physical characteristics, socio-cultural contexts such as peer group, family, mass media, youth culture and musical performances like concerts have a great impact on the attractiveness of different musical instruments (Bastian 1991; Pickering & Repacholi 2001). Furthermore, choices of musical instruments are often gender-specific: People of all ages divide instruments concurringly up into female and male instruments, and – with the exception of children in the kindergarten – tend to prefer for themselves those that are considered as corresponding to their own gender (Abeles & Porter 1978; Griswold & Chroback 1981; Delzell & Leppla 1992; O'Neill 1997; Pickering & Repacholi 2001). Additionally the gender-specific musical instrument choices of their sons and daughters seem to be supported by the parents (Abeles & Porter 1978). Gender-stereotyping of musical instruments leads to a limitation of the musical options available for boys and girls to select from, and therefore to a self-constrained limitation of his or her musical experience and development. Boys and girls restrict themselves to certain musical activities and instruments to avoid being accused of "musical transvestism" (O'Neill 1997). Children who violate gender boundaries – by choosing the "wrong" instrument – are less popular with other children (O'Neill 1997). Thus, fearing the loss of peer acceptance reinforces stereotypic musical instrument choices. Nevertheless, the studies mentioned above agreed in the fact that the gender stereotypes are more relevant to boys than to girls. The avoidance of any femininity seems to be an important feature of the male gender role. The survey reported here investigates the influence of the musical instruments' sound, their appearance, and movement of playing on their attraction for young people. Furthermore, gender-images ascribed to particular instruments' sound, their appearance, and movement of playing are assumed to be important for instrument choice. The hypothesis was that the appeal of a musical instrument varied with the ascribed gender-image: Boys and girls prefer musical instruments the more they perceive them as corresponding to their own sex.

2. THE SAMPLE

187 12-18 year olds participated in the survey. They were all students of either grade 6 or 9 of the secondary school (n=48) or the secondary modern school (n=55), or of either grade 6, 9 or 12 of the grammar school (n=84) of a medium size city with a rural catchment area. 82 of the interviewees are female, 105 male. 84 of the participants play a musical instrument.

3. METHOD

Research designs in musicology require audiovisual questionnaires and cannot be restricted to discursive methods. (Müller 2002a, pp. 591). The use of an audiovisual method which combines aural and film material, as it was used by Scheuer (1998) for the first time and later by Pickering & Repacholi (2001), appears to be the appropriate method to investigate musical instrument preferences. „Audiovisual questionnaires .. facilitate the research of young people's interaction with music, as this type of research presents the .. musical and the audiovisual material to a generation whose world is saturated with symbols, sounds, and images. Beyond that the instrument respects adolescents of different educational, cultural, and ethnic

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backgrounds – not requiring that they talk about their musical interaction in elaborated speech.“ (Müller 2002a, p. 592) If audiovisual questionnaires are presented by the computer and if questionnaire-authoring systems are used, costs can be reduced considerably. Among the other advantages of computer aided interviewing this means a facilitation and “democratization of research methodologies that otherwise would be available only to big companies.“ (Müller 2002b, 592)

The study reported here has been carried out by means of the authoring system for multimedia surveys FrAuMuMe (Müller 2002b). Within FrAuMuMe, the computer system carries through and controls the presentation of questionnaires, of musical pieces, of pictures, and of music videos, and the gathering of data, as well as the preparation of data analysis. Observations, for example response-time measurement, are integrated. Different audiovisual presentations can be used as treatments within experimental designs. Due to the interactivity of the system the respondents are allowed to make their choices between musical pieces and music videos. FrAuMuMe applies the following methods among others to investigate musical preferences: verbal, audio, and revealed preferences (aesthetic choices), and continuous response methods, all of which have been used in this study.

In the course of an audiovisual questionnaire ten musical instruments (saxophone, clarinet, flute, trumpet, trombone, accordion, piano, keyboard, violin and guitar) were presented by the means of sound examples, pictures, and by the means of video sequences showing the instruments being played. The appeal of sound, appearance and movement of playing of each of the ten musical instruments was rated on a 5-point Likert-type scale anchored on the words „attractive“ and „repulsive“. To examine gender-images each instrument’s sound, appearance and movement of playing was additionally rated on a 5-point Likert-type scale anchored on the words „masculine“ and „feminine“ [IMAGE_3.BMP]. Ratings, rankings [IMAGE_4.BMP, IMAGE_5.BMP] and multiple choice methods have been applied. The respondents have been interviewed by the multimedia-computer, each respondent answering his or her own audiovisual questionnaire with randomly assigned order of items, of music samples, of pictures and of videos. The ascribed images to the sound and the appreciation of the sound of each instrument was investigated by one sound example per instrument [IMAGE_1.BMP]. The presentation of the sound examples was not supported by any pictures nor by the name of the instrument (blue screen). For each of the ten sound examples, the same musical piece was used. Characteristics like the key, the speed, the dynamics and the interpretation of the musical piece just as well as the recording situation for each of the instruments were kept constant [SOUND_1.WAV, SOUND_2.WAV, SOUND_3.WAV, SOUND_4.WAV, SOUND_5.WAV, SOUND_6.WAV, SOUND_7.WAV, SOUND_8.WAV, SOUND_9.WAV, SOUND_10.WAV]. For the evaluation of the instruments’ appearance, pictures of them were presented to the interviewees [IMAGE_2.BMP, IMAGE_3.BMP, IMAGE_4.BMP]. It was considered as important that the pictures displayed only the instruments themselves and not any musicians playing them as this could have an effect on the perception of the instrument. For the same reason, the pictures were not backed with sound examples nor with the instrument’s name. The movement of playing was presented to the interviewees by video sequences of real playing situations like concerts [IMAGE_5.BMP]. Again, no sounds were presented along with the videos, and the name of the given instrument was not displayed. The video material was taken from recordings of live performances. The different problems resulting from the integration of existing video recordings whose contents can obviously not fully be controlled were taken into account: gender differences and differences of popularity of the musicians playing, the scenery and setting shown, the musical genre presented. Actually all the instruments except violin and accordion were played by male musicians. The choice of the ten instruments (saxophone, clarinet, flute, trumpet, trombone, accordion, piano, keyboard, violin and guitar) the survey focussed on was based on the results of the statistical yearbook of the association of German music schools. Our choice involves the ten most frequently played instruments within the lessons of the musical schools except for drums and singing.

4. RESULTS

4.1 Gender-Images of sound, appearance and movement of playing

To investigate whether the ascription of femininity or masculinity to certain musical instruments is based on the sound, the appearance or rather on the movement of playing, pairs of variables were formed to carry out T-Tests.

Pair Comparisons of Gender-Images: Sound and Appearance	Mean Differences	Sign. (2-tailed)
Piano Sound Gender (3,30) Piano Appearance Gender (2,97)	,33	**
Keyboard Sound Gender (3,21) Keyboard Appearance Gender (2,55)	,67	***
Flute Sound Gender (3,98) Flute Appearance Gender (4,39)	-,40	***
Clarinet Sound Gender (3,57) Clarinet Appearance Gender (3,91)	-,34	***
Trumpet Sound Gender (2,50) Trumpet Appearance Gender (1,87)	,63	***
Accordion Sound Gender (2,63) Accordion Appearance Gender (2,12)	,50	***

Table 1: T-Tests of Gender: Sound and Appearance (*: p<05; **: p<.01; ***: p<.001)

Table 1 shows only significant differences between sound and appearance: The sound of the piano is considered as more female than its appearance. The appearances of flute and clarinet are regarded as more female than their sounds. For keyboard, trumpet and accordion, their appearance appears to be more male than their sound.

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Pair Comparisons of Gender-Images: Sound and Movement	Mean Differences	Sign. (2-tailed)
Piano Sound Gender (3,30) Piano Movement Gender (2,73)	,57	***
Guitar Sound Gender (2,66) Guitar Movement Gender (2,43)	,22	*
Violin Sound Gender (3,69) Violin Spielbewegung Gender (3,90)	-,21	*
Keyboard Sound Gender (3,21) Keyboard Movement Gender (2,16)	1,06	***
Saxophone Sound Gender (2,52) Saxophone Movement Gender (2,10)	,42	***
Trombone Sound Gender (1,87) Trombone Movement Gender (2,10)	-,22	*
Accordion Sound Gender (2,63) Accordion Movement Gender (2,90)	-.28	*

Table 2: T-Tests of Gender: Sound and Movement

Table 2 shows only significant differences between sound and movement of playing: For piano, keyboard, saxophone and guitar, the movement of playing is conceived as more male than the sound. The sound of the violin is regarded as less female than the movement of playing, whereby the violin was played by a woman. The sound of the trombone and the accordion is significantly more male than the movement of playing. It is important to mention that the trombone was played by a man and the accordion by a woman.

Pair Comparisons of Gender-Images: Appearance and Movement	Mean Differences	Sign. (2-tailed)
Piano Appearance Gender (3,30) Piano Movement Gender (2,73)	,25	*
Guitar Appearance Gender (2,66) Guitar Movement Gender (2,43)	,38	***
Keyboard Appearance Gender (3,21) Keyboard Movement Gender (2,16)	,39	***
Flute Appearance Gender (3,98)– Flute Movement Gender (3,79)	,60	***
Clarinet Appearance Gender (3,57) Clarinet Movement Gender (3,43)	,48	***
Trumpet Appearance Gender (2,50) Trumpet Movement Gender (2,30)	-,44	***
Saxophone Appearance Gender (2,52) Saxophone Movement Gender (2,10)	,35	***
Trombone Appearance Gender (1,87) Trombone Movement Gender (2,10)	-,25	**
Accordion Appearance Gender (2,63) Accordion Movement Gender (2,90)	-,78	***

Table 3: T-Tests of Gender: Appearance and Movement

Table 3 shows only significant differences between appearance and movement of playing: The movement of playing is considered as more male than the appearance for the piano, the guitar, the trumpet and the saxophone – which are all played by men. The movement of playing of the flute and the clarinet appears to be less female than the appearance of these instruments – which may be caused by the fact that they were both played by men in the video sequences. For trombone and accordion, it can be found that the movement of playing is less male than their appearance, even though only the trombone was played by a man whereas the accordion was played by a woman. This corresponds with the findings of Repacholi & Pickering (2001): If the sound or appearance of a musical instrument is considered as rather male or rather female, this ascribed gender image is intensified by a person of the corresponding gender playing the instrument. If the gender of the person playing the instrument does not correspond with the ascribed gender image to the sound and the appearance, this ascribed gender image will become less strong.

2.2 Gender Differences of Gender-Images

It was also examined whether the gender-image teenagers ascribe to musical instruments is influenced by sex, educational level, age, and instrumental playing. The trumpet is the only instrument of which the sound, the appearance and the movement of playing are rated more male by both the instrumentalists and those with the highest degree of education than by the non-instrumentalists and the ones with lower degrees of education. Besides this the significant gender differences are reported.

Sound. Girls considered the sound of the trombone as more male than the boys in the sample. The opposite applies to the piano.

Appearance. The girls in the sample regarded the piano as rather female, whereas the boys considered it as rather male. Accordion and trumpet both were seen as more male by the girls than by the boys. The girls regarded the violin as more female than the boys.

Movement of Playing. The girls in the sample considered the trombone, the trumpet and the accordion as more male than the boys concerning the movement of playing. The opposite applies to the ascribed gender image of the keyboard: The movement of playing was regarded as more male by the boys than by the girls.

4.3 Gender-Image and Attractiveness of Musical Instruments

Correlations between the attractiveness of the instruments' sound and of the gender image of this sound were computed both, for boys and girls together and for boys and girls separately (see table 4). The same was carried out for the attraction of the instrument's appearance and the ascribed femininity or masculinity to this appearance. Furthermore, the attractiveness of the movement of playing was correlated to the gender image of the movement of playing for each of the ten instruments.

The results support the hypothesis that the attractiveness of a musical instrument depends on the gender image ascribed to it by the interviewees. Accordingly, the exclusively negative correlations between the instrument's attractiveness and its ascribed gender found for the girls indicate that girls find the sound (see table 4), the appearance (without table) and the movement of playing (without table) the more attractive the more female they consider these features of the instrument to be. The

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same applies to the boys: The exclusively positive correlations indicate that the attractiveness of musical instruments is the stronger for them the more male they regard the instruments' sound (see table 4), their appearance (without table) and their movement of playing (without table).

Correlations between gender image of sound and attraction of sound	Correlations (Pearson, Sign. (2-tailed))					
	Girls & Boys (n=187)		Girls (n=82)		Boys (n=105)	
Saxophone	-,056		-,452	***	,229	*
Piano	,091		-,087		,324	***
Guitar	,254	***	-,040		,460	***
Violin	,072		-,135		,237	*
Keyboard	-,056		-,357	***	,221	*
Flute	-,175	*	-,398	***	,011	
Clarinet	-,022		-,223	*	,223	*
Trumpet	,130		-,146		,384	***
Trombone	,147	*	-,084		,344	***
Accordion	-,090		-,358	***	,126	

Table 4: Correlations between gender image of sound and attraction of sound

Sign. Correlations between Gender-images and Attraction	Instr.	Sound	Appear.	Mov.
Girls	Saxophone	X		
	Piano			X
	Keyboard	X		X
	Flute	X	X	X
	Clarinet	X	X	
	Trumpet		X	
	Accordion	X	X	
Boys	Saxophone	X		X
	Piano	X	X	
	Guitar	X	X	X
	Violin	X		X
	Keyboard	X		X
	Flute		X	X
	Clarinet	X	X	
	Trumpet	X	X	X
	Trombone	X		
	Accordion			X

Table 5: Instruments with significant correlations between gender image and attraction

Table 5 contains all the instruments that show significant correlations between the gender ascribed to their sound, appearance and movement of playing and the attractiveness of their sound, appearance and of their movement of playing. It is conspicuous that the results correspond with the findings of other studies which report that boys tend to connect their preference for musical instruments more closely to stereotypic gender ascriptions to the instruments than girls (Crowther & Durkin 1982; Delzell & Leppla 1992).

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