Usage of nonverbal expressions between boys and girls during the Voice Kids battles

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Abstract

The aim of the study was to examine the effect on the perceived level of happiness of children after the result of the battle performance. A total of 36 fragments was collected from the television program The Voice Kids. As it was expected girls show more body language (of happiness) compared to boys after the result of the battle phase. In addition, the second hypothesis that children show more body language (of happiness) when they go through to the next round instead of when being rejected was also confirmed. However, for the interaction effect that girls show more body language (of happiness) when they go through to the next round compared to boys was not supported. The hypotheses were examined with the aid of a quantitative research, a Qualtrics survey, and qualitative research, namely a coding scheme.

Keywords: gender; body language; facial expressions; nonverbal communication

Introduction

Each person shows emotion as a reaction on different events. For example, we react in a joyful way if we win, and we react disappointed if we lose. These emotions become manifest in facial expressions and body language. In addition, it has become a common assumption that women are more emotional and also show more expression regarding the emotions they experience. However, to what extent is this assumption scientifically proven?

Different studies have shown that there is a difference between men and women, and the extent to which they show facial expressions when positive or negative emotions are experienced (Brody & Hall, 2008). A study of Hall, Carter, and Horgan (2000) showed that women convey different amounts and types of expressive behavior than men, such as smiling more.

It is proposed that women show more powerless emotions whereas men show more powerful emotions (Fischer, 1993). Powerless emotions in this aspect are emotions that show vulnerability (*e.g.*, fear and sadness) and powerful emotions are linked with dominance (*e.g.*, anger and pride). Allen and Haccoun (1976) showed that women show fearful emotions with more severity than men and women show more facial expressions of fear (Kring & Gordon, 1998). According to Leppänen and Hietanen (2004), facial expressions of happiness are easier to recognize than facial expressions of anger. However, there is a difference between adults and children. For example, a study of Fabes and Martin (1991) found that children express their emotions more obvious than adults, and thereby these emotions are easier to recognize. In addition, a study of Hubbard (2001) showed that children who have been rejected once before show stronger facial expressions in comparison to children who do not often experience a rejection.

Nevertheless, there is no clear evidence that there is a difference between children (*i.e.*, boys and girls) and the extent to which they show facial expressions and body language. Therefore, this study focuses on the difference between boys and girls with respect to the use of facial expressions and body language. These differences are measured during the battles in the Dutch television program The Voice Kids. In the battles, both boys and girls sing with each other. However, according to Shields, Garner, Di Leone and Hadley (2006), people keep in mind their gender and the self-presentation that fits their gender. For example, that big boys do not cry. This means that boys do not cry in front of others because it simply 'does not belong' when being a boy. Therefore, this study focuses on only boys in a group or only girls in a group during the battles. Central is the extent to which children use nonverbal communication when they are not through the next round after the battles.

The research question in this study is as follows: "*What are the differences between boys and girls and their usage of facial expressions and body language regarding a disappointment and a godsend?"* We expect that there is a main effect of gender; girls show more body language (of happiness) compared to boys after the result of the battle phase (H_1). In addition, we expect that there

is also a main effect of performance result; children show more body language (of happiness) when they win the battle instead of when being rejected (H_2). Finally, we expect an interaction effect; girls show more body language (of happiness) when they win the battle compared to boys (H_3).

Stimuli Collection

Selection Criteria

Prior to the perception test, the video fragments had to be selected. In total sixteen videos were selected from the website of RTL XL, which is the official channel that broadcast the television program. An account on the website of RTL XL was created in order to get access to the seasons and episodes we were interested in. The selected videos solely contained the fragment of the battle phase where a specific participating child was winning the battle or when a specific participating child was losing the battle. Sixteen videos consisted of either three girls or three boys between the age of eight and fourteen years old. Moreover, a selection criterion for the videos was that the participating child face and body posture had to be clearly imaged. There was a total of nine girl groups and nine boy groups, which were randomly selected. Since the aim of the study was to examine the difference regarding the degree of happiness between gender and performance result, each video was showed two times, resulting in a total of 36 fragments collected.

Video Editing

The selected video fragments were screen recorded and edited with the program Quick Time Player. The fragments did not last longer than 30 seconds, showing just the final part of the battle where the judge(s) announced which participating child was through to the next round. Only the final part was used since only the reaction of the participating child, winning or losing, was required for the study. The fragments were also edited without sound in order to prevent sound from being a variable. Furthermore, all the fragments were saved two times separately. Namely, one fragment where the focus was on the winner (see Figure 1) and one fragment where the focus was on the person who lose the battle (see Figure 2).

Figure 1. Two examples of kids who won the battle.

Figure 2. Two examples of kids who lose the battle.

Coding

The Action units of the Facial Action Coding System by Ekman, Friesen and Hager (2002) was used in order to find certain nonverbal cues that fitted the nonverbal communication of children. Eight nonverbal cues were chosen, based on adjustability and visibility. The presence of the following nonverbal cues was measured: head up, head down, making a fist, laughing, crying, waving, lips pouting, and clapping. The presence of the nonverbal cues was annotated by yes (present) or no (not present). Each group member measured at least one nonverbal cue, the nonverbal cues were counted per participating child. In order to measure whether the group members agreed on how often a nonverbal cue occurred, the inter-coder reliability was calculated. Each group member coded 25 videos of another group member, which was 25 percent of the total number of videos. To determine the degree of intra - or inter-rater - reliability, a Kappa analysis was conducted. The inter-coder reliability was very satisfactory for each nonverbal cue (all $\kappa > .8$).

Perception Test

Design

For this study, a 2 x 2 within-subjects design was conducted to measure the differences and nonverbal behaviors between the groups. The independent variables were gender (male vs.

female), and performance result (winning vs. losing). The dependent variable was the perceived level of happiness after the performance result. A total of 36 short fragments (18 videos used two times) of The Voice Kids during the battle phase were collected.

Participants

The final sample size consisted of a total of 29 respondents, 15 males and 14 females with an age between 20 and 60. The mean age was 33.21 (*SD* = 13.47). Participants were selected through a convenience sample. The only requirement that researchers had before selecting participants was that they were able to communicate well in Dutch and had a decent level of understanding this language, since the questions were in Dutch. Participants took part under two sets of conditions. Each condition was randomly and equally presented.

Materials

An online Dutch questionnaire was created to measure the degree of happiness of each participating child after a judge made the final decision after the battle. The versions were designed and randomly assigned in Qualtrics. The video fragments in de Qualtrics were designed with Quick Time Player as described in 'Video Editing'.

Procedure

The online survey was conducted in the first week of March 2017. Each experimenter conducted the experiment separately with their participants. The questionnaire was made available through Qualtrics so that the participants could fill it in at the time and place of convenience. Before the experiment started, a brief description about the study was given whereby participants were instructed to read the instructions carefully. In addition, it was communicated that the participant was able to ask questions at any time to the experimenter if something was unclear. It was estimated that each participant needed approximately 15 minutes to successfully complete the survey. If participants agreed with the informed consent they had to click on the continue button (>>). First, some basic demographic questions about their gender, age, and attitude towards television and The Voice Kids followed. Subsequently, the participants were exposed to the stimuli. The participant first saw a small text instructing them to watch the video and focus on a specific participating child. The description of the specific participating child was, for example "Focus on the left participant who is wearing a white dress and glasses". After each video that was approximately 30 seconds, the statement to "Indicate on a scale from 1-10, the level of agreement of the participating child you had to examine" followed. The answer had to be rated on a 10-point Likert Scale, ranging from 1 (*not happy at all*) to 10 (*very happy*) for each of the 36 fragments.

Participants saw each video two times; first to observe when a specific participating child was winning the battle, and second to observe when another specific participating was not winning the battle. After all the fragments were shown, one recall question followed asking about the familiarity of the videos that were shown. Finally, participants were thanked for their cooperation.

Results

Since the hypotheses in this research were all directional, one-tailed p-values were noted instead of two-tailed (Field, 2013). In order to assess the three hypotheses, a factorial repeated-measures ANOVA was used for the quantitative part. The current study has a 2 x 2 within-subjects design, with gender (boys and girls) and the performance result (winning and losing) as within-subjects factors. The dependent variable was the perceived level of happiness after the performance result.

The descriptive statistics, listed in Table 1, showed that girls were rated as happier than boys when they won, but also when they lost the battle.

Because the two factors (*i.e.*, the independent variables) only has two levels, the assumption of sphericity is not applicable here and the contrasts did not had to be interpreted. Moreover, the degrees of freedom for these two effects has not to be corrected by the Greenhouse-Geisser estimates of sphericity.

Table 1. Descriptive statistics of each condition.

Gender & performance result	*N*	*M*	*SD*
Boys win	18	6.60	0.96
Boys lose	18	2.56	0.98
Girls win	18	6.85	0.88
Girls lose	18	3.10	1.04

The contrasts showed a significant main effect of gender on the level of happiness, (1, 28) = 18.61, $p < .001$, $r = .40$, indicating that boys were perceived as less happy than girls (see Table 2 for descriptive statistics). Additionally, there was also a significant main effect of the performance result on the level of happiness, $F(1, 28) = 216.88$, $p < .001$, $r = .89$. This effect indicated that children who have won the battle expressed more happiness than children who have lost the battle. Furthermore, there is not a significant interaction effect between gender and the performance result on the level of happiness, $F(1, 28) = 2.60$, $p = .12$, $\eta^2 = .09$.

Table 2. Average level of happiness measured by gender and performance result.

Independent variables	Mean	Std. Error	95% Confidence Interval	
			Lower Bound	Upper Bound
Boys	4.58	0.11	4.35	4.81
Girls	4.98	0.11	4.75	5.21
Win	6.73	0.16	6.39	7.06
Lose	2.83	0.17	2.48	3.18

Results Coding

After analyzing the hypotheses, an extra Pearson Chi-Squared test was conducted over the coding scheme. There were four significant associations between some specific nonverbal cues and the performance result. The p-values for the nonverbal cues "making a fist" (χ^2 (1) = 5.79, $p < .001$), "lip pouting" (χ^2 (1) = 7.20, $p < .001$) "crying" (χ^2 (1) = 3.27, $p = .04$) and "clapping" (χ^2 (1) = 3.20, $p = .04$) were significant. For the nonverbal cues and gender there were two significant results, namely "crying" (χ^2 (1) = 3.27, $p = .04$) and "waving" (χ^2 (1) = 3.27, $p < .001$).

In order to measure the degree of nonverbal cues between gender and the performance result, a new variable was computed, called "DegreeNonVerbalCues". Subsequently, a two-way ANOVA was performed. The ANOVA showed a significant main effect of gender ($F(1, 32) = 3.57$, $p = .03$) and the performance result ($F(1, 32) = 3.77$, $p = .03$). Results showed that more nonverbal cues were used when children have lost ($M = 2.55$, $SD = 0.90$) compared to when they have won ($M = 1.99$, $SD = 0.76$). In addition, boys have used more nonverbal cues ($M = 2.56$, $SD = 0.98$) in comparing with girls ($M = 2.00$, $SD = 0.77$), see Table 3 for percentages of nonverbal cues. There was no significant interaction effect between the gender and the performance result regarding the degree of nonverbal cues, $F(1, 32) = .15$, $p = .30$, $\eta^2 = .01$.

Table 3. Percentage of nonverbal cues between boys and girls.

Nonverbal cue	Boys	Girls
Head up	11.1%	5.6%
Head down	27.8%	33.3%
Making a fist	22.2%	22.2%
Smiling	100%	88.9%
Crying	16.7%	0%
Waving	44.4%	16.7%
Pouting lips	16.7%	16.7%
Clapping	16.7%	16.7%

Conclusion

The aim of this research was to examine the effect on the perceived level of happiness of children's gender (boys vs. girls) accompanied by the result of the battle performance (winning vs. losing). The current study consisted of three hypotheses, including two main effects and one interaction effect. These three hypotheses were examined with the aid of a quantitative research, a Qualtrics survey and a qualitative research, namely a coding scheme.

H_1, the first main effect hypothesis – 'Girls show more body language of happiness compared to boys after the result of the battle phase' - is supported. The results of the investigation showed that girls are perceived happier than boys after the judge(s) decision about the battle apart from winning or losing. Thus, the girls are more expressive in their nonverbal communication that indicates more happiness than boys in winning situations as well as in losing situations.

A second finding of the current study was that the candidates were more expressive in nonverbal communication that indicated cues of happiness when they won the battle. This means that the second main effect hypothesis, H_2 - 'Children show more body language of happiness when they win the battle instead of when being rejected' – is supported. Thus, the children show in general more facial expressions and body language that indicates cues of happiness when they win the battle.

In conclusion, H_3, the hypothesis for the interaction effect is: 'Girls show more body language of happiness when they win the battle compared to boys' is not supported, due to a non-significant outcome.

In contrast with the quantitative conclusions, the conclusions of the qualitative part are that boys show more nonverbal behaviors than the girls. Moreover, more nonverbal cues are used when the children lose the battle compared to win the battle.

Discussion

According to previous studies about gender differences (Brody & Hall, 2008), the current study provided support for the difference between boys and girls and the extent to which they show body language and facial expressions when positive or negative emotions were experienced.

The findings of the present quantitative study provides support that girls are more expressive and show more emotions of happiness in winning and losing situations, such as smiling more (Hall et al., 2000). However, this experiment has mainly focused on the emotion of happiness for being more expressive. In contrast, the qualitative research showed different results, because there was also focused on other nonverbal cues. The results showed that boys used more nonverbal cues than the girls. Therefore, it is worthy for further research to focus on different types of emotions of expressiveness.

Nevertheless, it is also interesting to focus more on the nonverbal cue 'laughing', especially studying the difference between winning versus losing contexts. Laughing can be a conventional nonverbal cue, namely socially desirable behavior, which may be result in a Duchenne or non-Duchenne smile. A rising question can be: is the person in a losing situation producing a non-Duchenne smile, and is the person in a winning situation producing a Duchenne smile?

Moreover, the gender differences in nonverbal cues are preferably studied in individual situations instead of in groups of three, thus eliminating interpersonally biases. Interpersonal context can influence one's nonverbal behaviors. The gender fitting self-presentation (Shields et al., 2006) in this case is yet to be examined.

In addition, differences in the recording of the Voice Kids season should be taken into account. Production choices in camera-positions and editing can reveal more or less nonverbal cues due to selection and timeframe. Also participating children protocols can differ between seasons. For example, in one season the participating children were asked to wave or run alongside the audience, and thereby forcing more 'happiness' cues. In another season, the participating children had to greet the coaches that resulted in most cases revealing more cues of happiness or sadness.

Furthermore, the reaction of the coaches may influence the emotional mindset of a participating child. The causal relation between the coaches' feedback and the degree of happiness leaves possible ground for further research.

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