

The Communicated Message in Spontaneous Facial Expressions of younger and older people in a Dutch Singing Contest

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Abstract

Research has shown that emotions of facial expressions of adults are perceptible. However, it remains unclear whether emotions of facial expressions of younger people are perceptible and if the perception differs between younger and older people. Current research investigates whether the emotional state of a person is perceptible in spontaneous facial expressions and whether these results differ between younger and older people. This is investigated by collecting YouTube clips of the program *Idols* and cut the three seconds on the moment of the verdict. In total 28 participants conducted the experiment and judged whether the candidates won or loose and indicate their certainty. The results show that losing facial expressions of the contestants can be perceived better than the winning facial expressions. Furthermore, the emotional state of the younger candidates can be better perceived when winning and the emotional state of the older candidates can be better perceived when losing.

Keywords: Emotions; perception; facial expression, winning, losing.

Introduction

Facial expressions of emotions are universally recognized (Matsumoto, 2001). Ekman and Friesen (1971) have classified six facial expressions, which correspond to distinct universal emotions. These facial expressions are happiness, sadness, surprise, fear, disgust and anger. It is noteworthy that four out of six emotions are argued to be negative emotions.

Positive emotions, like enjoyment, are usually displayed in winning situations, such as winning a competition (Keltner, 1995). However, when people lose a competition they display negative emotions or express less facial expressions. They smile less, try to show no emotion to neutralize their emotions in order to not show their emotions to others. Many individuals keep their emotions in check during competition, pending the final outcome (Kerr, Wilson, & Nakamura, 2005). Furthermore, it seems that not expressing positive emotions is considered to be a successful social strategy in winning situations, when obtaining a positive reputation. Inexpressive winners were judged more positively than expressive winners (Kalokerinos, Greenaway, Pedder, & Margetts, 2014).

Matsumoto and Willingham (2006) found in their study of spontaneous expressions of medal winners of the Athens Olympic games, that winners mainly show positive emotions and it seems that especially the Duchenne smile with open-mouth is a signal of

enjoyment. This is in accordance with the study of Ekman (2003) who argues that all enjoyment emotions are signalled in the face by a Duchenne smile. However, Matsumoto and Willingham (2006) did not found a unique expression of defeat. The emotions that were displayed were negative, like sadness or contempt.

Furthermore, Gross et al. (1997) have investigated age differences in emotional experience, expression, and control. The results show that older people have less facial expressiveness than younger people. Moreover, older participants have greater anger control. This is in accordance with the research of Faber and Martin (1991) who argue that when children grow older, they become less expressive and learn to control their facial expressions.

Additionally, Wagner, MacDonald, and Manstead (1986) have investigated whether spontaneous, dynamic facial expressions provide adequate information to make correct judgments about the sender's emotional experience. The results show that spontaneous facial expressions of happiness, disgust and anger were accurately judged, the remaining facial expressions of fear, sadness and surprise were not communicated significantly.

Nevertheless, most research in judging spontaneous facial expressions has been done on adults. It remains unclear, however, whether the results differ between younger people and older people. In our research we want to investigate whether the emotional state of a person is communicated clearly by means of spontaneous facial expressions. Moreover, we are curious if the results differ between younger people and older people. We have collected video clips from YouTube of people who have participated in the popular singing television program *Idols* in the Netherlands, which is a program about a contest to determine the best singer of the Netherlands. We have specifically collected clips from people who have participated in the 'audition rounds', because in this round people sing for the first time and will be judged for the first time by the judges of *Idols*. When the judges evaluate the singer positively, this can be seen as a situation where the contestant feels victorious. Additionally, when the judges evaluate the singer negatively, this can be seen as a situation where the contestants feel defeated. We can assume that all the contestant of *Idols* initially think they can sing and have a chance of winning.

We are going to conduct a perception study by investigating if the emotional state of the contestants is communicated via spontaneous emotional expressions the moment they hear the verdict of the judges of Idols. The verdict can either be positive (winning) or negative (losing). Moreover, we have made a distinction in age differences (younger people or older people. Fabes and Martin (1991) found that children are more openly expressive in their emotions than are adults. Furthermore, it is expected that people who experience victory display a smile (Matsumoto & Willingham, 2006). Therefore, we expect that (H1) younger people who display happiness will be judged more accurately as a winning person than older people displaying happiness. Moreover, people who lose are expected to show sadness or contempt (Matsumoto & Willingham, 2006). Therefore, we expect that (H2) younger people who display sadness will be judged more accurately as a losing person than adults displaying sadness.

Method

Design

For this experiment, 28 participants with an average age of 32.86 ($SD = 14.42$) have participated in the experiment. The average age of the male participants ($N = 14$) was 32.14 ($SD = 13.63$) and the average age of the female participants ($N = 14$) was 33.57 ($SD = 15.65$).

The independent variables were the results (winning vs. losing) and age (young vs. old). The dependent variable was the perception of others. The experiment was a 2 x 2 within-subject design because all participants ($N = 28$) have participated in all four conditions (young-winning, young-losing, old-winning and old-losing).

Materials

For this experiment, a movie was prepared, which contained fifteen video clips per condition with a duration of three seconds per video. Ekman and Friesen (1982b) have found that spontaneous emotional expressions last between 0.5 and 4 seconds on the face. The movie showed facial expressions of the contestants of Idols on the moment of the verdict. All videos were shown without sound. Furthermore, after each video, the participants had four seconds to answer the two questions. All 60 video clips were collected from YouTube. The movie was edited using 'Final Cut pro'. Moreover, the videos were shown in a randomized order by use of randomizer.org. The movie started with two examples in order to give the participants the possibility to practice and ask questions when something was not clear. The total movie lasted for 8.18 minutes.

The participants had to answer two questions for all the 60 clips. The survey was printed on an A4 format. The questions were:

1. Did this person lose or win?
2. How sure are you about your answer?

The participants had to encircle the right answer for the first question (lose/win). For the second question, the participants had to rate their certainty on a 4-point Likert scale, with 1 meaning certainly not sure and 4 meaning certainly sure.

Finally, after all the results were gathered, we have analyzed ten video clips more in-depth. The video clips were selected based on the results of the certainty scores of the judgments in the experiment; five video clips that were judged as definite winners (clips 4, 10, 11, 20, 55) and five video clips that were judged as definite losers (clips 18, 33, 34, 51, 52). Hereby, we chose to eliminate the clips in which famous persons did audition, so the analysis was not violated by the recognition of candidates by participants. The analysis was done by three of the researcher to stimulate objectivity. The clips were analyzed by means of a checklist, which can be found in appendix 1. This checklist was made according to the FACS (Ekman & Friesen, 1978) for happiness (winning) and sadness (losing). Typical FACS that we have used for smiling are: pushed up cheeks, crow's feet wrinkles, muscles of the eye movement and corners of the mouth rise. The typical FACS for losing are: inner brow raiser, brow lowered, lip corner depressor and lower lip depressor. Besides the facial expressions we also had a deeper look on the body movements of hands, head and arms.

Procedure

The participants were approached by the researchers within their own social environment. Each researcher conducted the experiment with four participants and remained in the same room as the participants in order to answer possible questions. Once the two example clips were finished and the participants understood the task, there was no further contact between the researcher and the participant until the experiment was finished. Afterwards, the participants were thanked for their participation.

Results

In order to test the hypothesis and answer the research question, a two-way ANOVA with repeated measures was conducted. The within subject factors that are entered are age (young and old) and result (winning and losing). The assumption of sphericity was met because both the factors contain only two levels. The conditions young-winning, old-winning, and old-losing did significantly deviate from normal, respectively $D(28) = .222, p < .005$, $D(28) = .195, p < .01$, $D(28) = .263, p < .001$. However, according to the histograms and the QQ-plots, we can conclude that it

should not influence the results of the ANOVA because of the large sample. The condition young-losing is normally distributed, $D(28) = .143$, $p = .151$. Next to that, the homogeneity of variance can be assumed because the Levene's test showed no significance in the four conditions. The variances were equal for the conditions young-winning $F(1, 26) = .260$, $p = .614$, young-losing $F(1,26) = .004$, $p = .948$, old-winning $F(1,26) = .465$, $p = .501$ and old-losing $F(1,26) = .161$, $p = .692$. Furthermore, the assumption of independent observations was met because every participant independently conducted the experiment. Moreover, the descriptive statistics are shown in table 1.

Table 1: Means and Standard Deviations of the correct judgment of the clips per condition.

Conditions	Mean (SD)
Young-winning (N=15)	10.11 (2.499)
Young-losing (N=15)	12.04 (2.081)
Old-winning (N=15)	9.79 (2.440)
Old-losing (N=15)	13.32 (2.212)

The two-way ANOVA shows a significant main effect for result [$F(1, 26) = 65.855$, $p < .001$] which means that losing ($M = 12.679$, $SD = .365$) can be better perceived than winning ($M = 9.946$, $SD = .438$). The results show no significant main effect on age [$F(1, 26) = 2.983$, $p = .096$]. Furthermore, an interaction effect was found on age and results [$F(1,26) = 11.582$, $p < .005$]. This indicates that there is a difference between the perception of the old and young candidates and winning and losing results. The younger candidates can be better perceived when winning than the older candidates. The facial expressions of older candidates can be better perceived when losing than the facial expressions of younger candidates. The interaction effect is shown in figure 1.

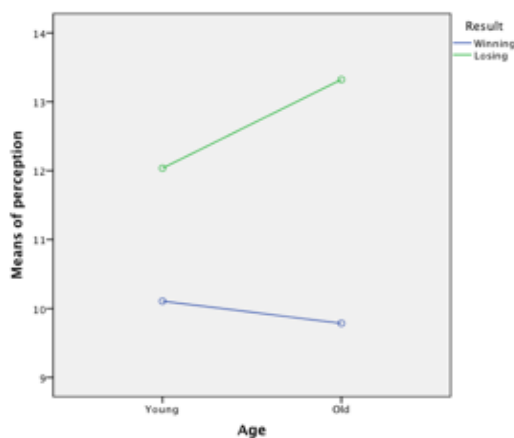


Figure 1: Interaction between age and result.

The in-depth analysis showed that the action units for happiness were present in the selected videos of the winning situations and were clearly noticeable. Gestures were not similar in all clips. Only upward movement of the arms are present in all the selected videos. Furthermore, the action units for sadness, especially the lip corner depressor and lower lip depressor, were clearly recognizable in the selected videos of losing situations.

Conclusion & Discussion

The aim of this study was to examine if the emotional state of the contestants was communicated via spontaneous emotional expressions the moment they heard the verdict of the judges of Idols. This verdict was positive (winning) or negative (losing). Besides that, a distinction was made in age differences (young vs. old). The results of current research show that the losing facial expressions of the contestants can be perceived better than the winning facial expressions, which is in contrast with research of Wagner, MacDonald, and Manstead (1986) who argue that happiness is judged more accurately than sadness. Furthermore, no difference was found in perceiving the emotional state of the younger versus older contestants.

Finally, the facial expression of the winning emotion of younger people can be perceived better than the adults. Therefore, the first hypothesis is confirmed since the judgement of the facial expressions in the winning situation of younger candidates was judged more accurately than older candidates. This is in accordance with research of Fabes and Martin (1991) and Gross et al. (1997) argue that younger people express their emotions more openly than older people. On the other hand, the facial expression of the losing emotion of adults can be perceived better than younger contestants. This means that the second hypothesis is not confirmed, the adults who displayed little facial emotions or negative emotions are judged more accurately than children. This is in contrast with earlier research (Fabes & Martin, 1991; Gross et al., 1997).

A possible explanation for the better perceptibility of the facial expressions in losing situations (with adults) compared to winning situations expressions is that people who enter this competition intentionally think they can sing and therefore have a chance to win. When they hear they are not good enough to enter the next round, this can come as a surprise for them. This can result in more facial expressions. This could be elaborated more in future research.

Younger candidates are perceived better when winning. A possible explanation can be that younger people cannot control their facial expressions compared to adults (Faber & Martin, 1991). The younger candidates were so happy to get a pass for the next round, they could not control their expressions.

There are several limitations regarding to our research. It is possible that the contestants of Idols were influenced due to the fact that Idols is a television program and that they were aware of the fact that the judgment was recorded and streamed on national television. Therefore, they might try to act differently than they normally do. Future research could investigate these facial expressions in more spontaneous situations.

Furthermore, the show has already been aired on television. Idols was a popular show and has gained a large number of viewers. The participants in our study might have recognized several candidates from the clips and already knew whether the person lost or won. It can be the case that the participants did not base their judgment on the facial expressions of these candidates but on their own knowledge.

A recommendation for future research is to focus more on different areas. Not only a singing competition, but also other competitions or win-lose situations. For example, a cooking competition or a sports competition. Furthermore, participation in this competition was possible from fifteen years old. Future research could conduct a research of spontaneous facial expressions among children who are younger than fifteen years.

Our research provides new opportunities for future research because we found contradictive results of previous research. The results show that facial expressions in a losing situation are better perceivable than facial expressions in a winning situation. This research is executed with both Dutch candidates and participants. Future research could focus on different cultures to investigate facial expressions and expressions in competitive situations.

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Appendixes

Appendix 1: Checklist in-depth analyses

Movie: Winning or Losing

Facial expressions winning (happy/ winning)

- *Pushed up the cheeks*
- *Crow's feet wrinkles*
- *Muscles of the eye movement*
- *Corners of the mouth rise*

Facial expressions losing (sadness/ losing)

- *Inner brow raiser*
- *Brow lowered*
- *Lip corner depressor*
- *Lower lip depressor*

Hand gestures

- *Single hand*
- *Two-hands*

Arm movements

Head movements

Remarks
