

Visual facial expressions of Dutch and Singaporean anchorwomen when presenting positive and negative news

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Abstract

Previous research showed that newsreaders use variations in their facial movements to support the information structure of their messages. Still there is not much evidence for the differences in facial expression of newsreaders presenting positive and negative news items. This study focuses on the facial expressions of Dutch and Singaporean newsreaders. Therefore, 60 video clips of different news items of a Dutch and Singaporean news channel were collected and edited. Subsequently, the soundless videos were shown to 30 participants who rated them and the news subjects on how positive or negative the news was, based on the facial expressions of the newsreader. The results of this study suggest that newsreaders adjust their expression to the tone of the news they are presenting. Furthermore, there were no significant results found that Dutch newsreaders are more expressive than Singaporean newsreaders.

Key words; facial expressions, newsreaders, the Netherlands, Singapore

Introduction

The role of a newsreader or anchorperson is vital for a television station. An anchorperson is a symbol of identity for a television network and they have become indispensable for their respective network (Khan, 1980). The aim of this study is to review the manner in which they visually express emotions during the presentation of positive or negative news. Female anchorpersons from two countries were analyzed; the Netherlands and Singapore. These countries were selected because, according to the theory of Hofstede (1991), they differentiate in individualism and expressivistic dimensions. This research tries to answer the following research question: *To what extent do Dutch and Singaporean news readers differ in facial expressions when presenting positive and negative news?*

Newsreaders

Earlier research on news anchors showed that Dutch newsreaders used subtle variations in their facial movement to support the information structure of their messages (Swerts & Kraemer, 2010). The use of subtle movements is further reviewed in the study of Ruttkay, Konijn and Hondorp (2005). They argue that newsreaders are poker-faced and that only a limited number of facial expressions is shown in a subtle way. In a study on expressions of emotions in anchorpersons during the announcement of the results of presidential elections in the USA, Friedman, DiMatteo and

Mertz (1980) concluded that there were significant differences in the facial expressions of the broadcaster on how positive they perceived the candidates to be.

Most of the previously conducted studies towards the expressions of newsreaders hint towards emotional expression but only in a subtle way (Swerts & Kraemer, 2010; Ruttkay et al., 2005).

Facial Expressions

In the last paragraph it was described that a conclusion of earlier research was that newsreaders show their emotions in a limited way (Ruttkay et al., 2005). In this paragraph, a further background on expressing emotions and communicating them by facial expressions is provided.

A combination of speech and movement aids understanding and helps the communication of additional information (Graf, Cosatto, Strom & Huang, 2002). In this study the focus lays on the additional communication of emotions during the reading of the news. Therefore, it is important to see which facial expressions people make during the bringing of positive or negative news.

Several research indicated that people are quite adept at recognizing facial expressions (Ekman, 1984). Furthermore, Hess, Blairy and Kleck (1997) found that decoding subtle facial expression by receivers of a message was accurate as well. Porter and ten Brinke (2008) investigated if aspects of facial communication are uncontrollable and therefore can betray someones true emotions. The results showed that all participants revealed some form of emotional leakage, which happens when people unconsciously express small amounts of emotions. Furthermore, they found that it was more difficult for participants to falsify negative emotions, such as disgust or sadness, than positive emotions as happiness. Based on these results, the researchers conclude that the human face clearly has the potential to show secretly held emotions.

Therefore, based on the earlier literature the following hypothesis will be examined within this study: *H1: Participants are able to distinguish, based on the facial expressions, whether positive or negative news was presented by the anchorwoman.*

Cultural differences

Matsumoto and Juang (2007) define culture as a meaning and information system, transmitted across generations. Emotions are reactions to social coordination problems, and expressive behavior is one of the components of emotional responding (Matsumoto & Juang, 2007).

According to Haidt and Keltner (1999), expressive behavior has an important communicative function, because it regulates social interaction.

Showing emotions is culturally determined. According to Claes and Gerritsen (2007), Asian cultures seem to use a smile to hide feelings and cover their face, while in Europe smiling has the meaning of happiness and satisfaction. Therefore, it is possible that anchorwomen in Asian countries, like Singapore, smile when they are reporting about a negative news subject. Besides, there is an cultural difference in the amount of used facial expressions. Facial expressions while speaking are very limited in Asian cultures, while in Roman cultures the facial expressions are very clear and visible (Claes & Gerritsen, 2007). Because research states that Asian cultures are not expressive, the following hypothesis is formulated: *H2: Dutch anchorwomen are perceived to be more expressive when presenting the news, when compared to Singaporean anchorwomen.*

According to Hofstede (Hofstede, 1991), the Netherlands is a strong individualistic country with a score of 80, while Singapore is a collectivistic country with a score of 20. Matsumoto, Yoo & Fontaine (2008) declare that individualism is positively associated with higher overall expressivity norms. Singapore and the Netherlands are two countries that are different in that sense. According to this study of Hofstede, the following hypothesis is formulated: *H3: Participants are more easily able to make a distinction between negative and positive subjects presented by a Dutch anchorwoman, compared to subjects presented by a Singaporean anchorwoman.*

Stimuli Collection

Selection Criteria and Procedure

The design of this study is a 2 (Singapore versus Dutch newsreaders version) x 2 (positive and negative news version) between subjects design. To measure the differences in facial expressions, video clips from the Dutch and Singaporean news channels were used. To show participants a consistent image of the newsreaders, there was a need for only female news readers, presenting the news from a frontal view.

The clips were taken from the Dutch “NOS 8 uur Journaal” and the Singaporean “Channel 5”. For every condition, 15 video clips were used. Furthermore, both the selection of Dutch as well as Singaporean news clips were divided into two conditions: positive and negative news. Singaporean broadcasts were extracted via <http://www.youtube.com>, while Dutch broadcasts were extracted via <http://www.npo.nl>. To select the clips, the researchers selected news items that they deemed either positive or negative. The subject of these items were then presented to a second

researcher to ensure that they were in fact positive or negative. When both researches agreed, the subject was written down and given a number for later reference. After this, the clip was downloaded and edited.

Video Editing

The Singaporean clips were downloaded using <http://www.clipconverter.cc>. They were downloaded in an MP4 format at a resolution of 360p. Using Windows Live Movie Maker, the clips were edited to a length of approximately ten seconds. Furthermore, the sound of the clips was removed. Using Camtasia, an area of 236x262 pixels was then created, in which the face of the anchorwoman was placed. This was done to remove the background of the clip, which could give clues as to the subject of the news item. The result was an approximately ten second, soundless clip of the face of an anchorwoman.

The Dutch clips were created with the ‘record screen’ option in Camtasia. Creating an area around the face of the anchorwoman, ten second clips were recorded and stored as MP4. Sound was not recorded during this process. Afterwards, the recordings were resized to an area of 262x236 pixels. The difference in size between Dutch and Singaporean was the result of difference in camera setup: the Singaporean broadcasts used a static camera aimed on the face of the anchorwoman, while Dutch broadcasts used a camera that moved horizontally and zoomed in and out. This required a slight adjust in height and width of the clips. The final clips were stored with a filename that corresponded with the subject of the movie and the condition.

Perception Test

Participants

A total of 30 participants between 19 and 58 years old ($M = 30.4$, $SD = 12.0$) completed the survey. 13 (43.3%) of them were male, and 17 were female (56.7%). All participants lived in the Netherlands and spoke fluent Dutch. Participants were selected on the basis of convenience sampling and were often related to one of the researchers.

Materials

The conducted survey consisted of 60 news clips, each of which was approximately ten seconds. 30 newsclips were extracted from the Dutch “NOS 8 uur Journaal” and 30 clips were extracted from the Singaporean “Channel 5”. Furthermore, both the selection of Dutch as well as Singaporean news clips were divided over two conditions: positive and negative news. After all clips were recorded and edited, a survey was set up using <http://www.surveygizmo.com>. The starting page of the survey contained information about the goal and

length of the survey, as well as questions about the age and the gender of the participants. For the first part of the survey, each clip was given a separate page and the clips were shown in a random order with the question placed below the clip. This resulted in 60 pages for the clips. Each question was given a relevant SPSS variable name. For the second part, five news subjects were placed on a single page, each with its own question, which totalled twelve pages for the news subjects. As with the questions, each subject was given a relevant SPSS variable name.

Procedure

Because the survey was created in Dutch, Dutch speaking participants were personally contacted by the researchers, asking them if they were willing to participate in the study. When participants agreed, they were given the link to the survey. The survey started off with general information about the goal of the survey (to test the expressiveness of Dutch and Singaporean newsreaders) and information about the length of the survey (30 minutes). It was also explained that the survey would consist of two parts: a part where they had to rate the subject of the news item based on the expressiveness of the newsreader and the second part in which the participants had to rate actual news subjects. Participants were then asked to provide their gender and age. Once they clicked the “Next” button at the bottom of the page, the first part of the survey began. The participants were presented with all 60 clips in a random order, which single clips being presented on a separate page. Each clip was accompanied by the question “What type of news do you think the newsreader is presenting here?”. Below the clip, a 7-point Likert scale was presented, ranging from Very Negative to Very Positive. It was mandatory to answer each question, participants could not skip if they were unsure. Once all 60 clips were shown and the questions were answered, participants were given a two minute break before the second part started. For this part, participants had to rate news subjects, described in one sentence, on the same scale as in the first part. As with the first part, answering was mandatory. The news subjects were in accordance with the presented subjects by the newsreaders in the first part of the survey.

Results

Manipulation check: Perceived tone of subject

As a first step, the subjects of the news clips were tested to see whether they deviated enough from neutrality. A one sample t-test against the score for neutrality (4) indicated that some subjects did not differ from neutrality significantly. The clips which did not differ from neutrality were removed from

the further results. An overview of these clips is provided in appendix I. These subjects were removed from the analysis, because these subjects did not significantly score above chance level.

To further analyze if the manipulation was done correctly, a 2 (positive vs. negative subject) x2 (Singaporean vs. Dutch) factorial ANOVA with repeated measures was conducted to see if there was a difference in the way the participants perceived the subjects. In Table 2, the means and standard deviations are shown. The results in the table show that there are differences in the way news subjects are perceived. Subjects presented on Dutch television are perceived as both more positive and negative when compared to subjects presented on Singaporean television.

Table 2: Means and standard deviations (SD) of all conditions regarding news subjects.

| | Dutch | | Singaporean | |
|------------------|-------|------|-------------|------|
| | Mean | SD | Mean | SD |
| Positive subject | 5.47 | 0.48 | 4.93 | 0.61 |
| Negative subject | 2.10 | 0.48 | 3.49 | 0.62 |

A significant main effect of the tone of the subject (positive versus negative) was found; $F(1, 29) = 212.90, p < .001, \eta^2 = .88$. Furthermore, the main effect of news subjects between the countries was significant ($F(1, 29) = 73.39, p < .001, \eta^2 = .72$). This indicates no further problems with the manner in which the conditions were manipulated.

Expressiveness of newsreaders

A 2 (positive vs. negative news) x2 (Singaporean vs. Dutch) factorial ANOVA with repeated measures was conducted to see if there was a difference in the expressiveness between Dutch and Singaporean newsreaders. In Table 3, the means and standard deviations are shown. The table shows that positive news is indeed perceived to be more positive based on the facial expressions of the newsreaders. Furthermore, the mean differences between the facial expressions between the Dutch and Singaporean newsreaders do not seem to differ much, based on the means.

Table 3: Means and standard deviations (SD) of the facial expressions regarding positive and negative news

| | Dutch | | Singaporean | |
|------------------|-------|------|-------------|------|
| | Mean | SD | Mean | SD |
| Positive subject | 4.37 | 0.48 | 4.40 | 0.59 |
| Negative subject | 3.78 | 0.46 | 3.67 | 0.52 |

The main effect of expressiveness between the countries was not significant ($F(1, 29) = 0.12, p = .73, \eta^2 = .004$), meaning that the participants did not

perceive a difference between the Dutch anchorwomen and the Singaporean anchorwomen. Furthermore, a significant main effect of the tone of the subject (positive versus negative) was found; $F(1, 29) = 93.25, p < .001, \eta^2 = .76$. This indicates that the participants saw a difference between how positive or negative an item was presented. No significant interaction effect was found between subject and nationality of the newsreader: $F(1, 29) = 1.34, p = .11, \eta^2 = .04$, which means that subjects were not perceived as either more positive or negative depending on the nationality of the newsreader.

Discussion

The results of the research show that newsreaders alter their expression based on whether they are presenting positive or negative news subjects. These results support the first hypothesis that participants are able to distinguish, based on the facial expressions, whether positive or negative news was presented by the anchorwoman. This result is supported by the research of Swerts and Kraemer (2010), which states that Dutch newsreaders use subtle variation to support the information of their message. The research of Ruttkay et al. (2005) can be refuted with these results, because they state that newsreaders are overall poker-faced and are very limited in their facial expressions. Regarding to earlier research and the results from this research, the statement can be made that even if newsreaders only show subtle facial expressions while reading the news, the tone of the message can be distinguished by those expressions.

Regarding the second hypothesis, which states that Dutch anchorwomen are perceived to be more expressive when presenting the news compared to Singaporean anchorwomen, no significant main effect was found. This means that there was no effect of Dutch anchorwomen being more expressive than Singaporean anchorwomen. A possible explanation for this contradicting result is that within this research only one Dutch anchorwoman is analyzed. In the Singaporean version there were different female newsreaders analyzed which can result in a bias. This does not support the theory of Hofstede (1991) and Matsumoto et al. (2008) that a more individualistic country like the Netherlands is positively associated with higher overall expressivity norms. Besides, there was no evidence for the theory of Claes and Gerritsen (2007), that people in Asian cultures try to hide and cover their feelings, compared to the Netherlands.

The third hypothesis stated that it would be easier for Dutch participants to distinguish between positive and negative news presented by a Dutch anchorwoman, when compared to news presented by a Singaporean anchorwoman. This hypothesis

was not supported, which means that while Dutch people are able to distinguish the tone of the news, the nationality of the newsreader does not play a role in this. A possible explanation for this could be that newsreaders in both countries are trained to hide emotions, and therefore expressions, while presenting the news. This is in line with research by Ruttkay, Konijn and Hondorp (2005), who stated that the expressiveness of newsreaders is limited and subtle.

The main conclusion of this research is that the findings support the idea that the tone of a subject can be extracted from the facial expressions of an anchorwoman. Therefore, these findings suggest that there is a form of subtle leakage of facial expressions (Porter & ten Brinke, 2008) and that participants are able to accurately interpret these expressions. These findings support the ideas of Hess, Blairy and Kleck (1997) who stated that people were quite adept at understanding minor expressions.

For future studies among this field the subjects should be pretested. In this study the subjects were tested during the main research. Therefore adjustments were needed such as deleting subjects when they were perceived as neutral. Furthermore, it would be wise to further examine the cross cultural effect of the subjects. Since Dutch participants were used it is likely that they perceived subjects about the Netherlands as either more positive or negative than the Singaporean subjects, as these participants are more invested in Dutch news than Singaporean news. In following research, either participants from both countries or country neutral subjects are needed to overcome this limitation. Furthermore, a wider spectrum of newsreaders would provide a broader insight in the effect of country.

Conclusion

In this research to visual non-verbal communication of anchorwoman two different cultures are compared. The Dutch and Singaporean female newsreaders are compared by short video fragments to distinguish if the tone of the message can be read out the visual context. This research was conducted in order to answer the research question 'To what extent do Dutch and Singaporean newsreaders differ in facial expressions when presenting positive and negative news?' This research showed that regarding facial expressions, people can distinguish positive and negative news from the anchorwomen, though the nationality of the anchorwomen did not differ. It was also found that Dutch people are better able to distinguish positive and negative news when it is presented by a Dutch anchorwoman, compared to news presented by a Singaporean anchorwoman.

References

- Claes, M., Gerritsen, M. (2007). *Culturele waarden en communicatie in internationaal perspectief*. Bussum: Coutinho.
- Ekman, P. (1984). Expression and the nature of emotion. In K. Scherer & P. Ekman (Eds.), *Approaches to emotion* (pp. 319-344). Hillsdale, NJ: Erlbaum.
- Friedman, H. S., DiMatteo, M. R., & Mertz, T. I. (1980). Nonverbal Communication on Television News The Facial Expressions of Broadcasters during Coverage of a Presidential Election Campaign. *Personality and Social Psychology Bulletin*, 6(3), 427-435.
- Graf, H. P., Cosatto, E., Strom, V., & Huang, F. J. (2002, May). Visual prosody: Facial movements accompanying speech. In *Automatic Face and Gesture Recognition, 2002. Proceedings. Fifth IEEE International Conference on* (pp. 396-401). IEEE.
- Haidt, J., & Keltner, D. (1999). Culture and facial expression: Open-ended methods find more expressions and a gradient of recognition. *Cognition & Emotion*, 13(3), 225-266.
- Hess, U., Blairy, S., & Kleck, R. E. (1997). The intensity of emotional facial expressions and decoding accuracy. *Journal of Nonverbal Behavior*, 21(4), 241-257.
- Hofstede, G. (1991). *Allemaal andersdenkenden. Omgaan met cultuurverschillen*. Amsterdam: Contact.
- Khan, M. K. (2012). Anchorperson as Symbol of Identity: A Perceptual View of Audiences. *J Mass Commun Journalism*, 2, 129.
- Matsumoto, D., & Juang, L. (2007). *Culture and psychology (4th ed.)*. Belmont, CA: Wadsworth
- Matsumoto, D., Yoo, S. H., & Fontaine, J. (2008). Mapping expressive differences around the world the relationship between emotional display rules and individualism versus collectivism. *Journal of cross-cultural psychology*, 39(1), 55-74.
- Porter, S., & ten Brinke, L. (2008). Reading between the lies identifying concealed and falsified emotions in universal facial expressions. *Psychological Science*, 19(5), 508-514.
- Ruttkay, Z., Konijn, E. A., & Hondorp, H. (2005). Differences between poker-faced and affective, 'real' and 'virtual' news readers. AAMAS.
- Swerts, M., & Kraemer, E. (2010). Visual prosody of newsreaders: Effects of information structure, emotional content and intended audience on facial expressions. *Journal of Phonetics*, 38(2), 197-206.

| News subject | Country, type of news | t | p |
|--|-----------------------|-----|-----|
| 1)The Dutch royal family is on holiday in Argentina | Dutch positive | 1.5 | .15 |
| 2)The president of Singapore announced that there is no rush in the development of the Rail Corridor | Singapore positive | 1.5 | .14 |
| 3) The prizes for the resale of HDB-apartments is decreased with 18 percent | Singapore positive | 0.7 | .51 |
| 4) The secretary addresses to the Singaporean workers : 'This country must strive for a positive flow' | Singapore positive | 1.8 | .08 |
| 5) Mitt Romney has expended his lead over Rick Santorum in their bid for the Republican presidential nomination. | Singapore positive | 0.2 | .81 |
| 6) A year after the appointment of the Minister of Information, Communication and Art, the minister says that there are indeed differences between two areas in Singapore. | Singapore positive | 1.5 | .13 |
| 7) Men arrested whom is possibly responsible for killing 4 people in a Jewish School. | Singapore negative | 1.4 | .17 |
| 8) Bomb maker shows remorse during his trial in Indonesia | Singapore negative | 0.8 | .42 |
| 9) Hillary Clinton tells Iran to reduce the import of Iranian oil, as a way to sanction Iran | Singapore negative | 1.3 | .21 |
| 10) Demonstration got out of the hand, now an investigation is started of the acts of the police regarding this demonstration | Singapore negative | 1.4 | .16 |
| 11) Man arrested after a deadly shooting in California. | Singapore negative | 1.5 | .15 |

Appendix I

Results manipulation check of the news subjects, type of news, country, and results of the t-tests and p-values.

