Determining the Sincerity of Smiles: Are We Two-Faced?[1]

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A challenge we confront when interpreting non-verbal communication is determining if a person is sincere in their expression of emotion. The present study examined interpretations of whether smiles appeared genuine or false. The method used was to focus on the relative contribution of the left and right sides of a face to perceptions of smile-sincerity. Four conditions were used: Real smile; False smile; Left real; Right real). The left and right real smiles were constructed by deleting one side of the original real-smile photo and replacing it with the mirrored image of the remaining side. It was predicted that if sincerity was a function of symmetry, then the created smiles would be rated as most sincere. If sincerity is determined asymmetrically, then this would otherwise be revealed.

Introduction

It seems to be human tendency to "judge a book by its cover". In other words people often seem to look at someone and assume that they know something about that person's personality or demeanor. While non-verbal communication can tell you information about someone and it is possible to effectively describe someone's personality by looking at them there is also a great possibility for inaccuracy either with or without accuracy reading nonverbal communication can be very important and beneficial in our lives (Larson, Kleiner, 2004). This inaccuracy can occur by failing to interpret the non-verbal cues correctly and also by looking at different parts of the face to gain cues into their personality.

It has been shown that people make judgments of others based on facial appearance in a very fast and automatic manner, especially when it comes to trustworthiness (Tuk, Verlegh, Smidts, Wigboldus, 2009). When what a person says is ambiguous when it comes to trustworthiness people will then turn to facial cues to determine whether or not that person is trustworthy. According to the research people are very quick to make judgments about the trustworthiness, within 100 ms (Willis, & Todorov, 2006). People made judgments about another person's trustworthiness based on the person's face they were viewing. The study showed that two different kinds of faces were very common and both fit broad categories. People would view others as either baby faced, which many found trustworthy, and mature faced which less people

found trustworthy but people in this category were found trustworthy (Tuk, Verlegh, Smidts, & Wigboldus, 2009). Babyfaced meaning that the person has soft childlike features.

According to another study looking at the babyface categorization people tend to feel that an impression of a babyface women as warmer and less dominant were less when the face was moving than when it was static. Different facial expressions such as surprised or neutral expressions also change the viewer's perception of whether or not that woman is warm or less dominant (Tucker, & Friedman, 1993).

Further research will look at people's faces and have others determine what they believe to be that person's personality or demeanor. This research is important because in our world reading people's non-verbal cues can be as important their verbal cues. It is beneficial to a person to be effective at determining people's demeanor and personality in our world today. Being able to look at someone and know whether or not one should speak or stay quiet. Whether you should comfort someone or leave them alone, or knowing what your boss wants to be done without them saying so, could really benefit someone in the work force. Another example is if a police officer is adept at interpreting non-verbal communication and is skilled at detecting deception then that could really benefit their line of work (Pozzato, 2010). The non-verbal cues could help someone get things done without having to ask too many questions. It is also very beneficial to be effective at reading

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people's faces if you wanted to work with people for a living, because normally a person does not give information just through verbal communication and if you wanted to be helpful it would benefit you to know what they are not telling you. The inability to read non-verbal cues is a major social handicap and can effect a person throughout their life (Nowicki, 1989). Some research suggests that non-verbal communication is the predominant form of communication (Kemper, & Shaltout, 2011).

Every day in our lives we interact with others and we must interpret others emotions. When interacting with others people will often smile and people must decide if they are smiling for "real" or are they "faking" it. Asymmetries of the smiling facial movement were more frequent in deliberate imitations than spontaneous emotional expressions (Ekman, Hager, & Friesen, 1981). This research shows that people will tend to show different facial characteristics if they are genuinely smiling or if they are "fake" smiling.

If a picture of a person's face from directly in front of them was taken, bisected, and then both halves receive a mirror duplicate so that both halves of the left picture are of the left side one is just flipped, and the same on the right, would people be able to accurately determine that individual's personality? Taking a person's image, bisecting it, and mirroring each individual side so now there are two pictures, one of the left side that is mirrored and one of the right side that is mirrored.

After bisecting the pictures and altering them so that they are perfect mirror images, people will be tested to see if they can determine if that person is being fake in their emotions, or are they being genuine. These results will allow us to understand if non-verbal emotions are expressed using the entire face and will be skewed if only half is shown, or that half of ones face may say something different than the other when expressing an emotion. The main prediction of the present study is that people will be able to, more often than not, accurately predict whether or not a person is being genuine in their emotions and smile or are they being fake, or not genuine, and that one side of the face, as opposed to the other, may alter peoples interpretation of others genuineness.

Methods

Participants

Four college classes of subjects at Robert Morris University, a total of 90 students (31 men, 59 women), were surveyed. Each class was prompted that this is a study for a final thesis and then asked if they would be willing to take a short survey that is paired with a reel of slides showed through PowerPoint. Each slide was shown to the subjects for about ten seconds and the subjects answered three questions for each slide. There were no specific conditions for the subject to follow except to be as honest as possible when answering the survey. After all of the slides were shown then the surveys were collected and the data was gathered. Both males and females surveyed.

Design & Materials

A 2 (Gender of the stimuli: Male or Female) x 4 (Type of picture: Fake, Real, Right, or Left) between subjects was used to research whether or not people will be able to interpret others as being real/genuine or fake. A digital camera was used to collect all of the pictures for the experiment. A computer was used to upload all of the photos onto, create the PowerPoint, create the survey, to collect and analyze the data. To complete the slides Microsoft Office 2010 PowerPoint was used. 16 people were used as stimuli. To input and analyze the data Microsoft Office 2010 Excel was used. The internet and online databases were used to collect all resources and related information for the experiment.

Dependent Measures

There are multiple conditions of this experiment that are manipulated and are independent variables. The type of picture that is shown is an independent variable, which has four different types. They are the Fake, Real, the Left and the Right pictures. The second independent variable is the gender of the subjects being surveyed. The dependent variable is the rating that the picture will receive. There are 3 dependent variables because there are three questions per slide, each one giving its own rating and in turn being its own dependent variable. They are the dependent variable because they are not

manipulated and will be the constant in the experiment.

Procedures

Stimuli were chosen at random and were asked if they would be willing to participate in an experiment. There were sixteen stimuli were used in this study. All of the people who were used as stimuli who participated were young adults. All the stimuli were asked to pull their hair out of their face, for the women this means putting their hair back in a ponytail. They were also asked to remove any eye glasses, hair bands, nose rings or hair or facial accessories. Stimuli were asked to stand against a plain white wall with nothing behind them. Each stimulus then had two pictures taken of them from directly in front of them with the subjects chin parallel to the floor and their head not turned left or right but facing directly forward.

The volunteers were given a prompt before each photo. Before the first picture the people were told to portray a fake smile and then the picture was taken. Before the second picture they were asked to think of the happiest time in their life and give a genuine smile and then when they were smiling the second picture was taken. This was done for all 16 volunteers. After all of the pictures were taken they were then placed into slides. Each Stimulus will in the end have four pictures. They are the Fake, the Real, the Left, and the Right. The picture of them fake smiling (Fake), the picture of them genuinely smiling (Real), a picture of only the right side of the Real face mirrored over to create a whole right side image (Right), and a picture of only the left side of the Real face mirrored over to create a whole left side image (Left).

After each of the stimuli has four pictures of themselves the slide shows were assembled. Four slide shows were made, one for each of the four classes to be surveyed. The slides shows were labeled slides A, slides B, slides C, and slides D but that information was not known to the subjects. For each of the slide shows only one picture from each stimulus is shown and are not repeated so that there are only 16 pictures per slide show. So each set of slides has only one picture of a certain stimuli whether it be the Real , Fake, Left, or Right picture and each set of slides has the same number of each type of picture which is four of each. All of the slides were labeled with a number corresponding to the slide number. After all the slides shows were assembled then the survey was created.

The survey has on it 51 questions, the first three questions are there to gain information that would be needed from everyone. The First question is whether you are male or female, the second is whether or not you are introverted or extroverted and it is answered on a Likert scale from 1 to 7. With 1 being totally introverted and 7 being completely extroverted. The third question whether or not you believe that you are sensitive at reading others emotions. The remaining 48 questions then pertain to the slide shows being shown. For each slide in the slide show there are three questions. (1) On a scale from 1 to 7 how *Happy* does this person seem? (2) On a scale from 1 to 7 how *Trustworthy* does this person seem to be to you? With 1 being untrustworthy and 7 being trustworthy. (3) On a scale from 1 to 7 how *Real* (genuine or sincere) does this person's smile seem to you? With 1 being Fake and 7 being Real.

After all of the surveys were taken then the data were collected and placed into an excel spreadsheet. After all of the data were entered and organized then a statistical analysis (ANOVA) was run on the information to get the results.

Results

The data were analyzed using a 2 (Gender of the participant: Male or Female) x 4 (Type of picture: Fake, Real, Right, or Left) between subjects ANOVA on responses to the Trustworthiness question. There was found to be a

significant main effect of Type of Picture, *F*(3, 267) = 4.42, *p* < .01, in which the Real, Left, and Right faces were rated equally trustworthy at (4.29, 4.23, and 4.11 respectively) but fake was significantly less trustworthy (3.98) than the other conditions.

The data were analyzed using a 2 (Gender of the participant: Male or Female) x 4 (Type of picture: Fake, Real, Right, or Left) between subjects ANOVA on responses to the Happiness question. There was found to be a significant main effect of Type of Picture, *F*(3, 267) = 38.69, *p* < .01 in which the Real, Left and Right faces were (4.69, 4.85, 4.61) respectively but the fake was again significantly less happy (3.80) than the other conditions.

Discussion

These results confirm that when a person gives a Fake smile as a opposed to a Real one that people are able to, more accurately than not, interpret that smile and distinguish if that person is truly happy or if they are not happy and are trying to seem happy to others. This means that in our world people have gotten adept at interpreting when others are in a good mood or not. The results show that if people are surveyed and are looking at one of the faces they are more likely to rate the Fake face as unhappy. These results also show that the Right or the Left faces do not have any significant change from the Real face when it comes to interpreting happiness and that one would not need to look at the entire face to interpret if that person was happy or not.

The results also confirm that when a person gives a fake smile as opposed to a real one that people are able to, more often than not, interpret that smile and determine if they feel like that person is trustworthy or not. This means that relatively accurately people can tell if a person is portraying a fake smile and then determine from there if that person is to be trusted or not. These results also show that when a person's smile is interpreted as fake then people look at that fakeness as untrustworthy and will rate them lower in trustworthiness and determine that the person is not being honest.

The results found that the relationship between the faces and whether or not they are Real or Fake was not significant. The results determined that if a person is showing a Fake or Real, it is just looked at as a smile and is considered neither Real nor Fake it is just determined as a smile. Conclusively, the main prediction was proved to be accurate in that people were able to predict whether or not a person is being genuine in their happiness as opposed to being fake or not genuine.

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