

Facial and Body Expressions on Approachability

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As humans, we are social creatures. Interaction with one another is as commonplace as breathing. Within these essential interactions, people make decisions on whether or not to engage or avoid a stranger in situations such as asking for directions, finding the time, or donating money to a person in need. When we are unacquainted with an individual, our decision to engage with others is based on external appearance, specifically facial and body expressions.

Willis, Palermo, and Burke (2011) conducted an experiment (first of a three part study) in which they tested a person's approachability based on their facial or body expressions. This was one of the few studies to date looking at approachability in body expressions. They found happy facial expressions were more approachable than neutral facial expressions which were more approachable than angry facial expressions. They found that neutral body expressions were more approachable than happy body expressions which were more approachable than angry body expressions. Therefore, Willis et al. (2011) concluded that the meaning of emotional expression is dependent upon conveyance in the face and body.

In the present study, we attempted to replicate Willis et al. (2011) study. We hypothesized that we would come across similar findings for facial and body expressions. Our study was different because we tested participants in another country. The participants from the original study were from Australia whereas our participants were mostly from the southwestern United States.

### Method

#### Participants

The participants ( $n = 75$ ) were undergraduate students from a private university located in the southwestern region of the United States. The mean age of the participants in years was  $21.06 \pm .70$  *SD*. The study was comprised of sixty-one (78%) females and 17 (22%) males. The

majority of the participants were Caucasian (75%), followed by Asian (12%), Pacific Islander (10%), Latino/Hispanic (10%), and Native American (2%). All participants completed an informed consent sheet for their involvement in the study.

### **Instruments**

Participants were administered faces from the Karolinska Directed Emotional Faces Database (KDEF), a database created by Lundqvist, Flykt, and Öhman (1998). The KDEF consists of 4,900 pictures of facial expressions with different emotions to assess perception, attention, emotion and memory. The current study used the KDEF to determine how participants would rate facial expressions on approachability. We used the same stimuli as the original Willis et al. (2011) study. This included 30 facial stimuli (10 angry, 10 neutral, and 10 happy facial expressions). Out of the 30 stimuli, 15 were male faces and 15 were female faces. Goeleven, De Raedt, Leyman, & Verschuere (2008) found KDEF to be a reliable and valid instrument. For example, 87.96% of the emotion ratings of the pictures were consistent between Time 1 and Time 2.

To measure approachability, participants were administered stimuli selected from the Bodily Expressive Action Stimulus Test (BEAST). The BEAST is composed of 254 body expressions displaying anger, fear, happiness, and sadness. The BEAST has been used in previous research (Van den Stock et al., 2007; van de Riet, Grèzes, & de Gelder, 2009). In the current study, we used the same stimuli as the original study. We showed participants full-body photographs of 10 different people (five female bodies and five male bodies) displaying angry, happy, and neutral affective expressions. The face was obscured from the body stimuli in order to ensure that the body expressions were the only influences on the approachability rating. The

BEAST is a valuable addition to currently available tools for assessing recognition of affective information. de Gelder and Van den Stock (2011) found a 92.5% accuracy of all stimuli.

### **Procedure**

The participants were randomly selected from the student population. Emails were sent out to the sample requesting their participation in the research study. In the email, a link was provided which directed participants to our Qualtrics survey that contained both consent sheet and experimental stimuli. Once consent was given to participate in the study, individuals were directed to the Approachability Task. Participants were instructed to imagine being lost, in a hurry, and in an unfamiliar place. Thirty pictures of facial expressions were then presented in random order, which included 10 pictures for each of the three emotions (happy, neutral, and angry). The steps were then repeated for body expressions. The participants were asked to rate the various stimuli on a 5-point Likert scale ranging from -2 (“Strongly Disagree”) to +2 (“Strongly Agree”) to the extent they agreed with the statement, “I would approach this person and ask for directions.” Once participants completed the survey, they were presented with a debriefing page and contact information if they had any questions or concerns.

### **Results**

See Table 1 for mean values and standard deviations of the response measures.

Approachability ratings were examined using an Emotion (angry, neutral, happy) x Part (face, body) within subjects ANOVA design. The analysis yielded a significant Emotion main effect,  $F(2, 148) = 314.81, p < .001$ , a significant Part main effect,  $F(1, 74) = 65.74, p < .001$ ; and a significant Emotion x Part interaction,  $F(2, 148) = 34.97, p < .001$  (see Figure 1).

The “face” part condition showed a significant emotion main effect,  $F(2, 148) = 325.80, p < .001$ . The Duncan’s post hoc analysis found that the mean approachability rating of the angry

face condition was rated significantly less approachable than the mean of the neutral face condition; the neutral face condition was rated significantly less approachable than the happy face condition.

The test for the simple main effects of the interaction in the “body” part condition showed a significant emotion main effect,  $F(2, 148) = 154.99, p < .001$ . We conducted a Duncan’s post hoc analysis that found the mean approachability rating for the happy and neutral body conditions were significantly greater than the approachability ratings for the angry body condition (see Table 1). The neutral body condition was not significantly different from the happy body condition.

### **Discussion**

Except for one minor difference, we replicated Willis et al. (2011) first experiment in their three part study. Unlike their study that found neutral body expressions to be more approachable than happy body expressions, we found no significant differences between happy and neutral body expressions. We believe there might be several explanations for this difference. This could be due to the cultural differences between the participant populations based on geographical locations. Another possibility for the difference is our participants attend a private Christian university where attending chapel service is required. During chapel service, which is offered three times a week, some decide to raise their arms in "praise" which looks similar to some of the happy body expression stimuli. Therefore, our participants might have rated happy body expressions as more approachable than the original study.

Another potential explanation for our difference could include the personality characteristics of our subject pools. It is possible, for example, that extroversion/introversion correlates with approachability ratings. Our study may have included more extroverts or

introverts than the original pool. This might explain the slight difference in our results. Future research should include a measure of personality to determine if this is the case. In conclusion, when conducting studies analyzing the effect of facial expressions, the impact of body expressions should also be considered.

## References

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Table 1

*Approachability Scores of Various Face and Body Emotional Expressions*

Emotion	Face			Body		
	<i>n</i>	<i>M</i>	( <i>SD</i> )	<i>n</i>	<i>M</i>	( <i>SD</i> )
Happy	75	0.75	0.58	75	0.69	0.65
Neutral	75	0.01	0.58	75	0.59	0.57
Angry	75	-0.25	0.58	75	-0.76	0.66

Figure 1

