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Happy faces considered trustworthy irrespective of perceiver's mood: Challenges to the mood congruency effect



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ABSTRACT

Interpersonal trust is affected by the emotional states and facial expressions of the interacting parties. This study investigated the interactive (combined) effects of emotions and facial expressions by simultaneously manipulating both variables. Three laboratory experiments were conducted using a face evaluation task (i.e., choosing the most trustworthy face from a face pair) with happy, sad, and neutral faces. Experiment 1 tested the effect of facial expressions on trust judgments. Experiments 2 and 3 manipulated both facial expressions and perceiver's emotions. The results of the three experiments showed that happy faces were more often chosen as the most trustworthy relative to neutral and sad faces, and that perceiver's emotions did not influence trust judgment. These results indicated that other's facial expressions as dominant social cue would bias interpersonal trust, which might cause security issue in online social networks.

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1. Introduction

The rapid development of Internet technologies has introduced many users to online Multimedia Social Networks (MSN) (Amichai-Hamburger and Vinitzky, 2010; Ross et al., 2009). In these networks, personal information is exchanged; this information often includes feelings and trust judgments exchanged via text, sound, pictures and video (Shin, 2010). From the perspective of self-protection, users should be concerned about the trustworthiness of strangers they encounter in MSN. Establishing trust in the virtual world enables users to feel a sense of security, thereby promoting the exchange of personal information between users, including ideas, pictures, activities, event and hobbies. Therefore, in MSN, the

trust relationships between users directly affect information sharing and ongoing communication. In the virtual world, the most common modes of communication are written words and sounds. However, just as facial cues are an essential factor in establishing trust in the real world, visual interaction is still the preferred mode of interaction in the online world when seeking to establish trust (Gaertig et al., 2012). In a virtual environment, facial expressions can be automatically processed even in conditions where faces are only briefly presented, thereby affecting facial perception and social interaction (Bar et al., 2006; Willis and Todorov, 2006). Hence, in MSN, observing facial expressions is still the most direct way to judge the trustworthiness of a stranger.

The establishment of trust in MSN is an essential research question in the fields of social psychology and information

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security. Previous research that addressed trust in social interactions found that online communication was affected by many factors. Although personal factors such as emotional state, cultural background, personality, social interaction style and individual risk perception played a role in trust judgments, generic factors such as language style, body language and facial expressions were also identified as factors that affected trust (Lount, 2010; Lewicki et al., 2006; Lewis and Weigart, 1985; Kramer, 1999). In general, a happy expression (compared to angry or neutral) was more likely to be perceived as trustworthy (Said et al. 2009).

Two models have been proposed to explain the effect of perceiver's emotional state on interpersonal trust. The Associative Semantic Network Model (Bower, 1981) assumes that different emotional states yield different sensitivity to moodcongruent information in encoding and retrieval. As such, people in a positive mood would perceive more positive information about others and would be more likely to trust others (compared to people in a negative mood). However, the affect-as-information Model (Schwarz and Clore, 1988) introduced the all-or-none effect of mood on social judgments (including trust judgments). However, this model also hypothesized that a positive mood would increase interpersonal trust because this mood was attributed to the secure and predictable perception of the outside world. Both models indicate that emotional state or mood, especially positive mood plays a very important role in trust judgment.

1.1. Motivation

New technologies make it possible for people to convey emotions online using video chatting and facial expression symbols (emoticons). Even though either the perceiver's positive mood or the trustee's happy face could enhance personal trust, there are few studies that simultaneously examine these two factors using a face evaluation task. Therefore, the current study designed three laboratory experiments to investigate whether there was a combined effect of the perceiver's mood and trustee's facial expressions. Manipulating emotions in both parties of the social interaction, a better understanding of the interaction between emotion and interpersonal trust could be obtained.

1.2. Methodology

An experimental design was adopted for the present study. There were three experiments that used the face evaluation task in which a pair of face was presented and participant pressed one of two keys to choose the face on the left or the right as the most trustworthy face. Proportions of choosing an emotional face were recorded for each facial expression and then used as a measure of interpersonal trust. The effect of facial expressions would be manifested by greater proportion of choosing a happy face than choosing a neutral or a sad face.

The mood of each participant was manipulated by an emotion-inducement procedure in which either happy/sad music or happy/sad film clips were played before the face evaluation task was performed. Manipulation checks were also used to assess inducement efficiency. In experiment 1, two hundred and forty happy, sad and neutral face photos

from the Chinese Facial Affect Picture System (CFAPS) (Gong et al., 2011) were randomly chosen to examine the effect of facial expressions on interpersonal trust in the face evaluation task. Experiments 2 and 3 investigated the mood congruency effect by simultaneously manipulating facial expressions (using face photos) and perceiver's mood. The mood congruency effect (Winkielman et al., 2007) refers to a phenomenon in which participant's mood increases the processing efficiency of mood-congruent information. A separate set of face photos was selected from the same database in order to exclude ambiguous faces. The difference between the two experiments occurred in the mood-inducement procedures as well as the scales used for the manipulation checks. In experiment 2, participants were instructed to assess their emotions by marking a number on a 9-point scale (1-most pleasant, 5-neutral and 9-most unpleasant). The 9-point Likert scale has been used in numerous studies on emotions (Bradley et al., 1990, 2006; Cuthbert et al., 2000; Lang, 1995). The assessment occurred once the participant arrived in the laboratory and after they listened to English music. In experiment 3, participants reported their emotions and marked a number on a 9-point scale to represent the intensity of their emotions before and after they watched a film clip.

1.3. Contributions

First, the present study examined the interaction between emotion and interpersonal trust by considering both the perceiver's mood and trustee's facial expressions at the same time. It appears that this is the first study to simultaneously manipulate both factors in one experiment. The results enable a better understanding of the role that emotions play in establishing interpersonal trust. Current literature (see Background and related work) either focuses on the effect of the trustee's facial expressions on trust or on the effect of perceiver's mood. Dunn and Schweitzer (2005) noted a relationship between the induced mood of the perceiver and the emotions of the trustee. However, this interaction was eliminated once the participants became aware of the source of their emotions and also when they were familiar with the trustees. Their study used a trust inventory but did not present an experimental task for trust judgment.

Second, a laboratory-based experimental design was adopted for this study; this enabled better control for some of the confounding variables compared to other available methods. Laboratory experiments were also safe for examining causal relationships between the variables.

Finally, the face evaluation task was more akin to online communication, where communicators can observe emoticons relative to other tasks, such as the 'trust game' (Berg et al., 1995). The investigation of online trust using paradigms developed for studying trust in real world situations may be unreliable because interpersonal trust in the online environment differs from that in typical 'trust' games where people concern much about their gain and loss.

1.4. Structure

The following two sections first review the theoretical background and relevant studies on emotion and interpersonal

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