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# Affect and Communication: Perspectives of Information and Emotion Communication

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## 1. Basic Background

Affect and communication are both indispensable for human lives. People have experienced emotion and mood in their daily life. Several researchers found that emotion and mood have a critical role in human performance, ability, and even the way of thought (Clare & Huntsinger, 2007; Clare & Palmer, 2009). As well as communication, according to Maslow's theory of human needs at several levels, in particular needs for belonging, love, and esteem, although even at the more basic levels of physiological and safety needs, communication and co-ordination is essential to mental and physical wellbeing, and ultimately, survival (Baren et al., 2004).

A comprehensive understanding of affect and communication is necessary to improve current communication system, to design future effective communication channels or tools based system, and to understand the impact of affect in human communication. The study of affect and communication is not only benefit to the designer or system engineering, but also benefit to the field related to communication such as medical, psychology, and safety.

### 1.1 Affect and Emotion

Emotion and mood play critical roles in human life not only in human performance, but also the way of human thought (Clare & Huntsinger, 2007; Clare & Palmer, 2009). In the field of psychology, the term *affect* is defined as emotion or subjectively experienced feelings, such as happiness, sadness, fear, or anger (Colman, 2009). The difference between emotion and mood is that emotions are of short duration while moods continue longer period of time. In this dissertation, the word *affect* represents not only emotion, but also includes mood and feelings.

### 1.2 Communication

People do communication in general as one of the natural activities such as talking with intimate partner or sharing experience. Communication in general can be distinguished into factual communication and emotional communication (Reis & Shaver, 1988). Factual communication which I prefer to use the term *information communication* in this study, are those that reveal facts, personal facts, and information (Reis & Shaver, 1988). One example is that I have had 3 romantic partners in my life. Another is emotional communication, which I will use *affect communication* instead of emotional communication, are those that communicate one's private feeling, opinions, and judgments (Reis & Shaver, 1988). For instance, the last one which broke up was so painful that I'm not sure if I can love someone again.

Warnings are information communications which are intended to communicate safety issues or any risks. Risk is always in all aspects of our lives such as product use, the performance of tasks, and the environment always have associated risks. The purpose of any warnings is to help reducing or eliminating those risks by communicating knowledge about potential hazards and how to avoid them, but can also be thought of as reminders that a hazard is present (Lesch, 2003; Lesch, 2008b). As Laughery (2006) have said about four perspectives for warning which referred to as safer world, communicate information, influence behavior, and reminder.

The key issues of both information communication and affect communication may vary on the differences of communication settings. For instance, in the case of information communication of warnings, since warnings are intended to communicate safety issues, the effectiveness of information communication of warnings are critical regarding to safety. The effective warning must be: exposure to the warning, attention to the warning, active processing to the warning, comprehension and agreement with the warning, storage in memory, response selection, and response performance (Lesch, 2008b). How to design an effective warning sign still remains as the major issues to be concerned for the designer of warning sign.

On the other hand, when people communicate their affect to other, the important issue to be concerned is the appropriateness of the affect communication. Since affect communication can cause both positive (e.g. Gallois, 1994; Lelieveld et al., 2011; Wubben et al., 2009) and negative outcomes (e.g. Gibson, Schweitzer, Callister, & Gray, 2009; Robbins & Vandree, 2009) in various occasions, the issues of the appropriateness of the affect communication became the major research interest in this area. People may feel comfortable to communicate their affect when they perceived it is appropriate to communicate their affect, while the perception of inappropriateness to communicate their affect may lead to the feeling of uncomfortable and reluctant to communicate. When is it appropriate to communicate our affect? This question remains unclear in this research area.

This dissertation studied these two major aspects of communication that is the information communication and the affect communication which are explained in the following sections. Since warnings are information communication, the study of warnings was presented as an aspect of the information communication in this dissertation. Thus, the first study is focus on the information communication in aspect of how affect influences information communication of warnings (chapter 2). The second study is focus on the affect communication in aspect of the appropriateness of affect communication (chapter 3).

### **1.3 Information Communication: How affect influences information communication of warnings**

Warning is safety communications, as they are intended to communicate information about safety issues or problems. Wogalter and Laughery (1996) stated the goals of warning that is to inform people in order to appreciate potential hazards and the second goal is to change behavior to away from performing unsafe acts.

The effectiveness of information communication of warning sign are the critical issues in warning field. As mentioned in previous section that the concerned issues of warning

communication among the designers as well as researchers in warning fields are focusing on how to improve warning effectiveness. What the factors influences the effectiveness of warning communications are? These research questions have drawn many interests in the research field of safety communication. For instance, Laughery (2006) have identified and reviewed factors that researches have shown to be most significant in determining the effectiveness of warning by focus on attention, noticing and encoding. Lesch (2008b) have also defined the characteristic of effective warning sign that it must be: exposure to the warning, attention to the warning, active processing to the warning, comprehension and agreement with the warning, storage in memory, response selection, and response performance.

Many researchers were interested in comprehension and hazard perception of warning sign as one of the characteristics of the warnings effectiveness. Some researchers were interested in providing some training to improve the effectiveness of warning by conducted a series of studies to provide some kinds of training—normal training, scenario training—, as well as investigated on age-related differences and impact to training to improve comprehension (e.g. Lesch, 2003; Lesch, 2008a; Lesch, 2008b). Wogalter, Sojourner, and Brelsford (1997) also examined comprehensibility of safety pictorials and then provided a training procedure—short verbal description of the pictorial—to enhance comprehension and retention. Braun, Kline & Silver (1995) found that the warning sign presented in color were perceived to be more hazardous and more readable than those presented in black-and-white.

Besides the viewpoint of how to improve the effectiveness of warning sign, what factors influence the effectiveness of warning communications are also remained questioning to the researchers. Many studies have investigated the possible factors, while these studies were mostly focused on the external factors that influence on the effectiveness of warning sign such as the effect of context on the understand-ability of a symbol's meaning (Vukelich & Whitaker, 1993), the effect of component of warning sign such as an alerting word, then statement of the hazard, its seriousness, consequences and how to avoid the hazard (Adams et al., 1997), and the effect of color used in waning sign whether warning sign should be presented in black-and-white or color (Braun, Kline & Silver, 1994).

On the other hand, there are very few studies focusing on human factors or personal factors of the recipient who received the information from the warnings. For example, the influence from the education level, the type of employment, and gender on their level of perception of hazard and their difficulties in understanding warning sign (Banda & Sichilongo, 2006). Al-Madani and Al-Janahi (2002) also investigated the role of age, marital status, gender, nationality, education, and income in drivers' comprehension of traffic sign.

Despite a focus on personal characteristics, the affective state of the recipient has so far been overlooked as a potential influence on comprehension and hazard perception of warning pictorial. Isen and colleagues reported that when people felt good, their thinking became more creative, integrative, flexible, and they became more receptive (Isen, 1987). Positive affect can influence people to think, feel, and act in a productive way (Lyubomirsky et al., 2005). It is likely that affective states may influence people's skills as a productive way of thinking. Moreover, previous study has found that affective state plays an important role in risk perception (Solvic and Peters, 2006). Although these studies have provided some cues regarding to the influence of affective states on people's risk perception and ability in general,

there were unclear whether the affective states have influences on people's comprehension and hazard perception of warning pictorials.

The influences of affective states of people on the effectiveness of warning pictorial remain unclear. How affect influences information communication of warnings? Thus, our first study is to examine the influence of affective states on comprehension and hazard perception of warnings by focusing on warning pictorials (chapter 2).

#### **1.4 Affect Communication: The appropriateness of affect communication**

Individuals have the need to talk about and reflect on their emotional experiences (Derks et al., 2008). People communicate their affect not only as the human needs, but also do it as a strategic way of communication to achieve their goal (e.g. Gallois, 1994; Gibson, Schweitzer, Callister, & Gray, 2009; Lelieveld et al., 2011; Sutton, Mudrey-Camino, & Knight, 2009; Wubben et al., 2009). *Affect communication* in this dissertation is defined as the "the recognition, expression, and sharing of emotions or moods between two or more individuals which include both explicit and implicit emotion communication (Derks et al., 2008).

Several researchers found that inappropriate affect communication may lead to undesirable outcomes not only directly to self but also to surrounding people. For instance, at individual level, it can be linked to elevated blood pressure, heart disease, and feeling hostility. At interpersonal level, it can be linked to team conflict, interpersonal revenge, and blame (Gibson, Schweitzer, Callister, & Gray, 2009). Moreover in some occasions, inappropriate AC could be considered rude in some situation (Robbins & Vandree, 2009).

Therefore, the appropriateness of affect communication is an important issue in any communication setting. Occasionally, people have to regulate their real emotion due to display rules (Lee, & Wagner, 2002). Previous study found that it is more appropriate to express emotions in socio-emotional context than in task-oriented context which the rules can specifically according to roles, gender, situation and sub-culture (Derks, Bos, & Grumbkow, 2007). For example, communicating happiness in the relative's funeral while everyone is sad may be perceived as inappropriate. Whereas in wedding reception, communicating happiness may be perceived as appropriate.

Due to changing lifestyles and the emergence of new technologies, nowadays many of our daily interactions have become technologically mediated (Baren et al., 2004). People have always had a choice to choose how they are going to communicate (via internet, SNS, or over the phone). While, the traditional forming of communication channels have addressed in the most natural way: face-to-face, there are severe doubts whether mediated communication can afford the same affective characteristics as face-to-face communication (Baren et al., 2004).

Most existing communication media have been developed to support the exchange of information rather than emotion (Baren et al., 2004). This would be a challenge for communication technology designer to design any communication media to support the exchange of information as well as emotion. Often people engage in communication not merely to exchange information, but to pursue social and emotional goals such as being reassured about the well-being of others or to let other people know you are thinking about them (Baren

et al., 2004). In this case, the informational content of a message is of secondary importance to the emotional that is transmitted (Baren et al., 2004).

However, the appropriateness of affect communication is an importation issue regardless of communication media, there is still lack of scientific knowledge of how people's perceptions of the appropriateness of individual affect communication. An in-depth understanding of how individual doing affect communication is necessary to improve current communication system, to design future effective communication channels or tools based system, and to understand the impact of affect communication on human life. Moreover, it can be used for designing smart communication tools/systems that promote people when it good to promote and also help people hide their information when it should be hide. People then become comfortable and can communication naturally through any devices or channels to overcome the issue of distance or time. Thus, our second study is to identify factors that influence people's perceptions of the appropriateness of individual affect communication (chapter 3).

## **2. Purpose of Dissertation**

According to the reasons described in the previous section, this dissertation's general purpose was to explore in the research area of affect and communication. Communication can be distinguished between information communication and affect communication. In this dissertation, I focused on perspectives of information communication and affect communication. To achieve the main purposes, these researches attempts to focus on the following central objectives.

For the perspective of information communication, the communication of warnings was selected as information communication. With respect to the main purpose, the study presented in the second chapter intended to examine the influences of affective states on information communication in area of warnings communication. The purpose of the second chapter was to examine the effects of positive and negative affective states on the comprehension and hazard perception of warning pictorials

For the perspective of affect communication, in line with the general purpose of this dissertation, the research described in the third chapter was intended to examine the appropriateness of affect communication. The purpose of the third chapter was to identify factors that influence people's perceptions of the appropriateness of individual affect communication.

## **3. Structure of Dissertation**

This dissertation is organized into three main parts. Figure 1-1 presents the structure of this dissertation. The first part gives a brief introduction to the theoretical background of the studies comprising this dissertation (chapter 1). The important and necessity to study affect and communication in perspective of affect influences information communication of warning and the appropriateness of affect communication were addressed in this part. The second part presents two studies under two aspects of affect influences information communication of warning and the appropriateness of affect communication (chapter 2: perspective of affect

influences information communication of warning; and chapter 3: the appropriateness of affect communication). The last part (chapter 4 and chapter 5) includes a general discussion and conclusion. This part provided the general discussion across the studies and summarized the new findings in this dissertation as well as the implications for utilizing and results obtained. The conclusion, limitation, and the possible direction for future research were also discussed in this part. Brief descriptions of the chapters are presented as followings:

Chapter 1 sets the viewpoint for the present dissertation by providing relevant research backgrounds and essential information. The significance and purpose as well as structure of this dissertation are presented in this chapter.

Chapter 2 intended to investigate the influences of affective states on information communication in area of warnings communication by examining the effects of positive and negative affective states on the comprehension and hazard perception of warning pictorials. An experiment was conducted in this study. The affective states of the subjects in this study were manipulated.

Chapter 3 aims to explore the factors that influence people's perceptions of the appropriateness of individual affect communication. This study aims to draw the borderline between the situations where affect communication is recognized as appropriate (by society in general) and the situations where affect communication is recognized as not appropriate. Questionnaire based investigations were used in this study. Both internal (i.e. personality factors) and external (i.e. situation, interaction partner factors) possible factors were investigated in this study.

Chapter 4 provides the general discussions which related to the studies in this dissertation.

Chapter 5 concludes the findings and contribution of this dissertation. Limitations and the possible guidelines for future study were provided in this chapter.

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