

Perceived Usefulness of Features of Stickers in Text Messaging:

Effects of Gender and Text-Messaging Dependency

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Abstract—In text-based communication via social media, users can communicate using not only emoticons and emoji, but now also a third type of graphical symbol called “stickers.” This study focused on role of stickers in communication. A questionnaire was developed, which asked subjects to individually rate the usefulness of 25 features of stickers on a Likert-like scale. Using this questionnaire, a survey targeting 211 Japanese college students was conducted. Data obtained from the questionnaire were compared by gender and degree of text-messaging dependency for each question item. Results indicated significant effects of dependency and gender.

Keywords—sticker; emoticon; perceived usefulness; text-messaging dependency; gender differences; text messaging.

I. INTRODUCTION

In recent years, a new type of graphical symbol called a “sticker” has appeared in social-media-based text messaging applications [1]. This study focuses on the role of this new type of graphical symbol. Stickers play a role in transmitting emotions, similar to emoticons and emoji, but they also serve other functions [2]. Research comparing the features of emoticons, emoji, and stickers found that whereas emotional transmission is the main role of emoticons and emoji, stickers can also change the flow of communication and serve as an alternative to text messages [3]. This previous research [3] generated a detailed list of sticker features by administering a survey to hundreds of Japanese young adults who own smartphones and routinely use LINE messenger. Participants were asked to provide free-text descriptions of the usefulness of stickers. To examine the role of stickers in greater detail, a questionnaire was administered that contained questions related to each of these features.

Previous research has examined gender differences with respect to emoticon use [4]. For example, various researchers have suggested that women use more emoticons in computer-mediated communication. Conversely, another study showed that, compared with women, men use more emoticons in blog posts [5]. Results related to gender differences in emoticon use are thus mixed [6]. A previous study examined the usefulness of emoticons, emoji, and stickers, and showed gender differences in usefulness ratings of these three symbol types [3]. The authors suggested that ratings were influenced by text-messaging dependency [7] in

addition to gender. Namely, since symbols serve various roles, multifaceted effects of gender and dependency may appear within each role. This study separately examines these effects for each feature of stickers.

We prepared a questionnaire asking subjects to rate the multiple features of stickers on a Likert-like scale based on that employed in the previous study [3]. Using this questionnaire, we surveyed 211 Japanese college students. Data obtained from this questionnaire were compared by gender and degree of text-messaging dependency for each question item corresponding to each feature.

II. METHODS

Survey participants were 211 Japanese students (110 women, 101 men; mean age = 19.09; SD = 2.34) at universities in the Tokyo area. All participants possessed their own smartphone and regularly used messaging applications capable of exchanging stickers, such as LINE.

We constructed questionnaire items based on previously identified sticker features [3]. This was done by consensus of the authors. This resulted in a 25-item questionnaire that asked participants to rate each sticker’s usefulness feature

TABLE I. TWENTY-FIVE-ITEM QUESTIONNAIRE ON STICKERS

<ul style="list-style-type: none"> • Using stickers makes it easy to convey emotions. • Stickers make it easy to interpret emotions. • Using stickers can convey facial expressions. • Stickers show the facial expression of the sender. • Stickers can express messages that cannot be expressed in words. • Stickers can express subtle nuances. • It is possible to see the intent of the message just by looking at the sticker. • Stickers are cute. • The variety of stickers is abundant. • Using stickers can end a prolonged exchange. • Stickers accentuate textual exchange. • It is possible to express user preferences with stickers. • Using stickers makes interactions cheerier. • A text message is already included in the stickers (so inputting characters is unnecessary). • Using stickers makes interactions fun. • Using stickers facilitates interaction. • Using stickers can change the topic. • Introducing newly found stickers is fun. • Sending stickers is a catalyst for interaction. • Sending stickers can buy time to prepare text messages. • Using stickers speeds up interaction. • The stickers themselves become the conversation topic. • Stickers are playful. • Stickers can entertain recipients. • Lighthearted communication is possible using only stickers.

using a 7-point Likert-like scale from 1 (*not useful at all*) to 7 (*very useful*). These items are listed in Table 1.

We measured messaging dependency using an abbreviated 15-item version of the Text-Message Dependency Scale [7] modified by the authors. This scale comprises emotional reaction, perception of excessive use, and relationship maintenance subscales. Each subscale involves five questions scored on a 5-point Likert-like scale from 1 (*strongly disagree*) to 5 (*strongly agree*).

III. RESULTS

To investigate the influence of gender and degree of text-messaging dependency on each usefulness rating, we assigned gender (male or female) and dependency group (high or low) as between-subjects factors. We then performed a two-way analysis of variance for each item. Results indicated a significant main effect of gender for only the following items: “Using stickers makes it easy to convey emotions,” ($F(1, 207) = 5.49, p < 0.05, \eta_p^2 = 0.03$); “Stickers are cute,” ($F(1, 207) = 10.97, p < 0.001, \eta_p^2 = 0.05$); “Using stickers can end a prolonged exchange,” ($F(1, 205) = 4.25, p < 0.05, \eta_p^2 = 0.02$); and “A text message is already included in the stickers,” ($F(1, 206) = 14.05, p < 0.001, \eta_p^2 = 0.06$). Each of these significant differences indicate that women appreciate these features more than men do.

A significant main effect of dependency group was only seen for the following items: “Stickers can express messages that cannot be expressed by letters,” ($F(1, 204) = 5.63, p < 0.05, \eta_p^2 = 0.03$); “The variety of stickers is abundant,” ($F(1, 206) = 7.10, p < 0.01, \eta_p^2 = 0.03$); “Using stickers makes interactions cheerier,” ($F(1, 205) = 4.05, p < 0.05, \eta_p^2 = 0.02$); “Sending stickers is a catalyst for interaction,” ($F(1, 207) = 6.97, p < 0.01, \eta_p^2 = 0.03$); “The stickers themselves become the topic,” ($F(1, 207) = 7.53, p < 0.01, \eta_p^2 = 0.04$); and “Lighthearted communication is possible using only stickers,” ($F(1, 206) = 6.79, p < 0.01, \eta_p^2 = 0.03$). Each of these significant differences indicates that the high-dependency group appreciated these features more than the low-dependency group did. In addition, a significant main effect of the dependency group was seen in “Using stickers can convey facial expressions,” ($F(1, 207) = 6.17, p < 0.05, \eta_p^2 = 0.03$). However, this significant main effect is qualified by the significant interaction of gender \times dependency group, $F(1, 207) = 4.15, p < 0.05, \eta_p^2 = 0.02$. To rate this feature, we performed a simple main effect test using Bonferroni’s adjustment to investigate differences among the dependency groups for each gender. The results suggested that the high-dependency group rated this feature as more useful than did the low-dependency group among men ($p < 0.01$), but there was no significant difference among women.

Only the following items were significant in the gender \times dependency group interaction: $F(1, 207) = 4.22, p < 0.05, \eta_p^2 = 0.02$ in “Stickers can express subtle nuances”; and $F(1, 205) = 8.28, p < 0.01, \eta_p^2 = 0.04$ in “Using stickers facilitates interaction.” We performed simple main effect tests using Bonferroni’s adjustment to investigate differences among the dependency groups in each gender. The results showed that men in the high-dependency group rated these features as more useful than did those in the low-dependency group

(“Stickers can express subtle nuances,” $p < 0.05$, “Using stickers relieves interaction,” $p < 0.01$), but there were no significant differences among women.

IV. DISCUSSION

Regarding ratings of sticker roles, we found that some ratings are influenced by gender and some by degree of dependency. Further, there are both overlapping and unique parts within the scope of these influences.

Some features in which gender differences were found are functions common to both conventional emoticons and emoji. Many previous studies have found that women have higher affinity for emoticons and emoji than do men, while other research has shown no gender difference, or even opposing findings [6]. This study, which focused on stickers, may explain the mixed results related to emoticons and emoji. Gender differences were seen in the ratings of some sticker roles that are common with emoticons and emoji, but there were also effects of text-messaging dependency.

Roles related to the overall impact on interaction, such as “Sending stickers is a catalyst for interaction,” and “The stickers themselves become the conversation topic” appear to be roles unique to stickers [2][3]. There was no gender difference for these roles. The Text-Message Dependency Scale [7] measures how people perceive their usage of text messages along with their attitudes toward compulsive text-messaging in the context of interpersonal relationships. In particular, high-dependency groups tend to fear disruption of relationships in the absence of text messages [7]. Therefore, the high-dependency groups may be more careful in maintaining interactions via text messaging, and use stickers to accomplish this.

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REFERENCES

- [1] A. M. F. Yousef and G. Rößling, “How to design good educational blogs in LMS?,” CSEDU 2013 - The Sixth International Conference on Computer Supported Education, pp. 70-75, 2013.
- [2] S. S. Wang, “More than words? The effect of Line character sticker use on intimacy in the mobile communication environment,” *Social Science Computer Review*, vol. 34, pp. 456-478, 2016, doi:org/10.1177/0894439315590209.
- [3] S. Kato, Y. Ozawa, and Y. Kato, “Comparison of perceived usefulness of emoticons, emoji, and stickers in text messaging via smartphone,” *Proceedings of the International Symposium on Teaching, Education, and Learning ISTEEL-Winter 2018*, pp. 16-21, 2018, ISSN: 2409-1855
- [4] T. Luor, H. P. Lu, L. L. Wu, and Y. H. Tao, “The effect of emoticon in simplex and complex task-oriented communication: An empirical study of Instant Messaging,” *Computers in Human Behavior*, vol. 26, no. 5, pp. 889-895, 2010, doi:10.1016/j.chb.2010.02.003.
- [5] D. F. Witmer and S. L. Katzman, “On-line smilies: Does gender make a difference in the use of graphic accents?,” *Journal of Computer-Mediated Communication*, vol. 2, no. 4, 1997, doi/10.1111/j.1083-6101.1997.tb00192.x/full.

- [6] D. Derks, A. H. Fischer, and A. E. Bos, "The role of emoticon in computer-mediated communication: A review," *Computers in Human Behavior*, vol. 24, pp. 766-785, 2008, doi:10.1016/j.chb.2007.04.004.
- [7] T. Igarashi, T. Motoyoshi, J. Takai, and T. Yoshida, "No mobile, no life: Self-perception and text-message dependency among Japanese high school students," *Computers in Human Behavior*, vol. 24, pp. 2311-2324, 2008, doi:10.1016/j.chb.2007.12.001.