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Pragmatic functions of emoji in internet-based communication---a corpus-based study

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Abstract

Emojis have been indispensable and efficient tools in online interaction with the booming Internet and dramatically fast emergence of electronic communication channels. The present research is to study the pragmatic functions of emoji in internet-based communication within the revised framework of Linguagem em (Dis) curso (special issue on relevance theory) 14:511--529, 2014 8-function taxonomy. A total of 10 volunteers (20–40 years) were invited to collect a 3000-word latest corpus from their most active Wechat group respectively. Forty-six types of emoji in a corpus of 34,047 words were classified into 7 functions: attitude/emotion signal, attitude/emotion intensity enhancer, illocutionary force modifier, humor, irony, turn taking/giving, and backchannel device. We found emoji use was of high frequency, 1908 times in the corpus of 34,047 words, mainly as emotion signifier (attitude/ emotion signal and attitude/emotion intensity enhancer, 50.8%) and interaction device (turn taking/giving, backchannel device and illocutionary force modifier, 47.

8%). The top 3 most frequent emojis were 👍 (thump-up)(477 times) 🌹 (rose) (222 times) and 🙏 (traditional Chinese way of greeting and thanks) (108 times), which were used in an exaggerative and generalized way, slightly different from people's preference of other countries. Additionally, positive emojis were used more often than negative ones. These findings suggested that emojis are of high frequency, functionality and efficiency in internet-based communication. Interestingly, online preference to emoji use does not perfectly mirror non-verbal signs in face-to-face communication; and in socio-emotional setting, people tend to frequently use positive emojis to create positive atmosphere to boost group rapport.

Keywords: Pragmatic function, Emoji, Internet-based communication

Introduction

Emoji is a Japanese word, literally means "picture letter", which is a small digital picture or pictorial symbol that represents a thing, a feeling, or a concept, etc., used in text messages and other electronic communications. They are used almost in the same way as are emoticons and exist in various genres, including facial expressions, gestures, common objects, places and types of weather, and animals, for example, 🙂 and 👍.

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In face-to-face communication, a wide variety of functional verbal (e.g., stress, intonation, tone, etc.) and nonverbal (e.g., body language, dress, facial expression, etc.) tools can facilitate the achievement of the communicative goal for both parties. However, such virtual communication circumstances as forum, blog, instant messaging, which are mainly based on written texts, make verbal communication incomplete due to absence of suprasegmental features, and make it even impossible for the participants to use conventional nonverbal tools for smooth and successful communication. Lupyan & Dale (2016) reported that four groups of Instagram posts increased in emoji use by 30%–40% in 2015 compared with that in the last 2–3 years, and there was a gradual decrease in the use of text-based slang, suggesting that emojis are replacing the functions served by text-based slang in recent years. In fact, not only slangs but other forms of written texts are now rapidly giving way to emojis. Extremely fast development of technology also accelerates the process. Almost 40% Instagram posts in 2015 contained at least one emoji, which was a dramatic increase of 40% compared with those in 2012, because of Apple and Android releasing emoji keyboard and Instagram launching on Android platform (Lupyan & Dale, 2016). Emoji has gone so viral that Oxford Dictionaries even named 😂 (face with tears of joy) instead of other popular text words its 2015 Word of the Year. Emoji has been an efficient communicative device and it's inevitable for linguists to begin to notice their functions served in internet-based communication.

Literature review

Emoji, developed from emoticons (a blend of "emotion" and "icons"—refers to graphic signs, such as the smiley face: -), studies on emoticons were also included in the literature review), was originally designed as an indicator of affective states and emotions, containing nonverbal information that in real settings is conveyed through facial expression and other physical indicators (Dresner & Herring, 2010; Sakai, 2013; Maíz-Arévalo, 2015). Most Internet users could not perceive the correct emotion, attitude, and intent of the message sender with pure texts without emoticons (Lo, 2008). On the contrary, visual cues combined with texts were superior to texts alone in creation of a more positive attitude (Mitchell, 1986).

Besides accurate indication of emotion, emoji was also found to have pragmatic functions, to be specific, markers of illocutionary force (Dresner & Herring, 2010), politeness strategy (Darics, 2010; Kavanagh, 2016), face-saving strategies (Maíz-Arévalo, 2015) and boosters of group rapport (Golato and Taleghani-Nikazm, 2006; Walther and D'Addario, 2001) and of rapport among interlocutors (Maíz-Arévalo, 2015) as well. In short, emojis can clarify message intention, compensating for the absence of nonverbal cues in written communication. (Thompson & Filik, 2016). Researchers (Thompson & Foulger, 1996) also reported that verbal hostile messages with an emoticon were of a different hostility level from those without. In this case, emoji served as an emotion modifier. Furthermore, different types of emoji could serve different pragmatic functions in different communication settings. Luor et al. (2010) classified emoji into 3 categories, positive, negative and neutral, and reported that a negative effect could be caused by negative emoji in both simplex (e.g., scheduling meetings or greeting) and complex (i.e., discussing or coordinating tasks) task-oriented communication (i.e., in

the work place), while a positive effect could be created by positive emoji only in complex communication and for female employees in simplex communication.

In terms of taxonomy of pragmatic functions of Emoji (or emoticon), Provine et al. (2007) classified them, as additional or complementary information to the text message, into (a) those which constitute the only content of the message or "naked emoticons", (b) emoticons that are placed at the beginning or the end of the message (the most frequent), and (c) emoticons that are inside the message. The major function of emoticon in their study is a qualifier of the text message. Luor et al.'s (2010) classification was expressing emotion, enhancing the verbal message and expressing humour. While Kavanagh's (2010) classification seemed more detailed, i.e., (a) devices of modesty; (b) hedging devices; (c) to soften requests; (d) positive politeness strategies; (e) in rapport building; (f) humour; (g) to help convey emotion; (h) emphatic use; and (i) lexical use. Dresner, E., & Herring, S. C. (Dresner and Herring, 2012: p.62) classified emoticons simply into 3 categories, emotion indicator, non-emotion indicator, illocutionary force indicator.

Yus (2011:p.167) proposed a list of 7 instances arising from a simple nonverbal behaviour, yawning, considering the intentionality of the interlocutor and the possible effects on the other interlocutor. It's the taxonomy prototype of emoji functions that the present study refered to, which covers more possibilities compared with the previous studies. Some years later, Yus (2014) enriched the taxonomy by adding another descriptive variable, emotional gradation, and proposed an 8-function taxonomy, which has been so far the most comprehensive and complete with a wide coverage:

(1) to signal the propositional attitude that underlies the utterance and which would be difficult to identify without the aid of the emoticon;
(2) to communicate a higher intensity of a propositional attitude which has already been coded verbally;
(3) to strengthen/mitigate the illocutionary force of a speech act;
(4) to contradict the explicit content of the utterance (humor);
(5) to contradict the explicit content of the utterance (irony);
(6) to add a feeling or emotion toward the propositional content of the utterance (affective attitude toward the utterance);
(7) to add a feeling or emotion toward the communicative act as a whole (feeling or emotion in parallel to the communicative act);
(8) to communicate the intensity of a feeling or emotion that has been coded verbally.

Despite numerous researches conducted on Emoji (or emoticons) and their pragmatic functions, there are still limitations in the existing studies. Firstly, most empirical studies focused on one or two functions of emoji (e.g., Darics (2010) on politeness strategy; Dresner & Herring (2010) on illocutionary force; Maíz-Arévalo (2015) on face-saving strategies, etc.) Secondly, most taxonomy studies are introspective, with no reference to corpus. Of course, some samples of emoji uses were collected, but were very limited in sample size and were only used as examples (e.g., Dresner & Herring, 2010, 2012), which provides an incomplete view of effects that emoji exerts on communication. Thirdly, this study intends to investigate emoji roles from a relevance-theoretic perspective, i.e., the functions in which emojis may yield a more sophisticated

interpretation of the text message that they accompany. To our knowledge, Yus has always positioned his own work within pragmatics and especially within cognitive pragmatics as developed in Relevance Theory, and thus offers a unique perspective (Yus, 2009; Locher, 2013). So it's why only Yus's (2014) taxonomy framework was considered and revised in the present study. Finally, those using corpus to study emoji collected data mainly from such platforms as twitter, Facebook and instant messaging in English or other languages (e.g., Kavanagh, 2010, 2016; Luor et al., 2010), there has not been a study based on a corpus from a Chinese communication setting. Thus, the present research is to categorize emojis and their functions from a corpus of online groups in socio-emotional communication setting (socio-emotional communication setting showed a higher frequency in emoji use than task-oriented communication setting (Luor et al., 2010; Derks et al., 2008), so the former setting was chosen for a possibly larger size of material collection) within the revised framework of Yus (2014) 's 8-function taxonomy.

Methods

Emojis on Wechat (one of the most popular Chinese social media) corpus in the present study were categorized and analyzed within the main structure of Yus (2014) 's 8-function taxonomy, which had to be revised before it was eligible for the present study due to 3 reasons. First, naming of functions could be simplified for user- and reader-friendliness. Function 1 to 8 could be paraphrased and simplified as "attitude signal", "attitude intensity enhancer", "illocutionary force modifier", "humor", "irony", "emotion signal", "parallel emotion signal", "emotion intensity enhancer". Second, some functions could be combined for the blurred dividing line. As was indicated by Yus himself, sometimes it was difficult to differentiate "emotions" as in function 6 and 8 from "attitudes" as in function 1 and 2. So function 6 could be combined with function 1, and 8 with 2. It's even more subtle to differentiate function 7 from 6. Here is an example for function 7 "parallel emotion signal".

A:How pretty!!! Some parties, uh! You never stop!!!!: -).

B: Next time, I'll give you the heads up in case you feel like coming!!!: -).

Speaker B uses the smiley face not because she is happy to let A know about a future party, or happy to ask her out from the bottom of her heart. Instead, she is just showing she is happy while she types the message, or she is happy to have a feeling of enhanced friendship by texting the message. So it's not realistic or practical for researchers to distinguish if the emotion is aroused by the content of the utterance or just emotions emerging parallel to the typing behavior or those related to the behavior. So function 7 was merged with 6.

Third, two functions should be added to the taxonomy, turn-taking/giving, back-channel device. Samples that Yus's theory is based on are basically from 1 to 1 computer-mediated communication, such as instant messaging, while we found some samples in the present study can be categorized into none of these functions, as the current corpus was from Wechat groups, where everyone in a large audience could cut in and had an opportunity to talk. Unlike 1–1 communication, turn-taking or cutting in a conversation is a technique that participants have to use because of lack of natural

and default alternation as in 1–1 communication. Emoji seems less abrupt and less impolite to function as turn-taking or –giving than texts, so turn-taking/giving should be added as a function. Emoji has also been often used as a backchannel device, in other words, listener response, which is made to actively maintain the speaker's flow of speech (Tolins and Tree, 2014), and for the addressee to show politeness to the addresser. Despite the large audience and numerous group conversations, 1–1 conversation always happens. Even if the addressee doesn't want to continue the conversation, Emoji could be a subtle and polite closure. So the 8-function taxonomy was revised into the following:

1) Attitude/emotion signal;

e.g. 刚在医院开了过敏性鼻炎的药,我每次回国前必备鼻炎药😥😥.

(Just got some medicine for allergic rhinitis from the hospital, have to take some every time when I go back to China.)

The "frowning face" is a necessary supplement to the statement, without which the listener would be unlikely to understand the speaker's attitude or emotion about getting medicine for rhinitis.

1. (2) Attitude/emotion intensity enhancer;

e.g. 太开心了!我要回家了! 😁 😁.

(So happy! I'm going back home!)

The speaker already expressed the happy feeling about going back home verbally, but this feeling was beyond words, so a "grinning face" was used to express a higher level of happiness.

1. (3) Illocutionary force modifier;

e.g. 欢迎新朋友!入群三部曲,简介、 爆照、 发红包,一样不少 😁 😁.

(Welcome! Three musts for new friends, self-introduction, a selfie, and a Hongbao)

The context is that a new friend was invited to the group, and the speaker welcomed him and asked him to do three things, giving the audience a self-introduction, posting a selfie, and giving out a Hongbao (some money as a gift). Asking the friend to text a brief introduction is an reasonable and acceptable request on this occasion according to group rules, but asking him to post a selfie in the virtual community of strangers is not, and asking for money the first time they meet is very rude for the addresser and embarrassing for the addressee, although Chinese people have the culture of giving out Hongbao on many happy or even sad occasions. People usually give out Hongbao, but are not asked to give it out. So

the addresser used a grinning face to lessen the illocutionary force of the three directives to save face for both parties.

a) (4) Humor;
b) e.g. A:刚结束跑步机15公里,配速13。.
c) B:你把它虐成这样,人家不会叫你赔吧? 🤭
d) Just finished running 15 km on the treadmill, pace 13)
e) You abused it like this, didn't they ask you to pay for it?)

In this conversation, speaker A announced he just finished a long distance run at a very high pace, which he was very proud of and may be expecting compliments on. Speaker B transferred the topic from A's running record to the machine expenses and loss caused by the runner. Seemingly, A's record was not appreciated but complained about by B, but speaker B added a "grinning face covered with a hand" to make it clear that he was being humorous and did not want A to interpret it literally.

a) (5) Irony;
b) e.g. A:一早上都没闲下来,做头,做指甲,做美容.......
c) B:你可真忙 😬 .

(A. Not a second to take a breath this morning, hair-cut, manicure, facial care......)

(B. Really busy)

Speaker A's definition of being busy is not speaker B's being busy with work, as A didn't have a job, and B was a working person. When A was kept busy doing personal care, speaker B had been kept busy working for the whole morning before A talked to her and was being busy even at the moment she typed this message, so she used an emoji (mischievous) to communicate the opposite to what is explicitly uttered.

a) (6) Turn taking/giving.
b) e.g. A:祝贺通过考试!
c) B: 👍 .
d) B:话说这考试下一次是什么时候?
e) (A: Congratulations!)
f) B: 👍 .
g) B: (Well, when will be the next test?)

The context is that speaker A announced he passed a test, and dozens of people had congratulated him on his success. B was also interested in the test and thinking about taking the test next year. He wanted to ask for more information about it such as the time, which, however, was a different topic going against the present. Without ruining the present rapport of the group conversation, he used a thumb-up, seemingly a congratulation to A as other people did, but factually to cut in and start another topic.

a) (7) Backchannel device.
b) A: 师兄一路顺利!
c) B: @A 😄.
d) (A: Have a safe trip, buddy!)
e) (B: @A 😄)

B was going on a trip, and A sent regards to B. And B did not think it necessary to continue the conversation on the trip, so a smiley face was used as a response, which also served as a conversation closure.

In term of the corpus analyzed, a total of 10 volunteers (20–40 years) were invited to collect 3000-word latest episode of their most active Wechat (one of the most popular Chinese social Apps) group respectively. Wechat groups that participants selected were all of friends, families and relatives, and classmates, which are basically socio-emotional communication settings, instead of task-oriented communication from the work place. Each Emoji used in the conversation was tagged with a function. All types of Emojis used for the same function were counted for function ranking, and the same type of Emoji used for different functions was counted for Emoji ranking.

Results and discussion

A total of 46 types of Emoji were used in the corpus of 34,047 words. Results of corpus analysis are presented in tables below. Table 1 presents function ranking, Table 2 Emoji ranking, and Tables 3, 4 and 5 Emoji ranking for the top 3 functions.

Table 1 shows function ranking of Emoji, calculated by the total use of 46 types of Emoji as the same function, in which attitude/emotion signal, turn taking/giving and backchannel device are top 3 functions that it most frequently serves. Irony is the least used function in group communication.

As is shown in tables above, the most popular Emojis are thumb-up, rose and Chinese greeting in Wechat groups (Table 2). For the most important function, which emoji was originally invented for, attitude/emotion signal, the most popular emojis are rose, thumb-up and applause (Table 3). For the second most important function, turn taking/giving, the list of the most popular Emojis is similar to that of attitude/emotion signal, except for grinning face in replacement of applause (Table 4). "Thumb-up" for turn taking/giving, accounting for 61% of all Emojis, is predominant device compared with other Emojis. For backchannel devices, thumb-up, Chinese greeting and handshake come to the top 3 in use frequency (Table 5).

Table 1 Function ranking of Emojis

Rank	Function	Number
1	Attitude/emotion signal	630
2	Turn taking/giving	411
3	Backchannel device	378
4	Attitude/emotion intensity enhancer	339
5	Illocutionary force modifier	123
6	Humor	18
7	Irony	9

Table 2 Top 3 most frequent Emojis

Image	Name	Number
	Thumb-up	477
	Rose	222
	Traditional Chinese way of greeting and thanks	108

The total count of Emoji use is 1908 in the present corpus of 34,047 words (total number in Table 1), which equals to frequency of 56,040/million, approximately at the same frequency level of the word "each", whose frequency is 59,713 in British National Corpus (BYU-BNC) (ranking 155 in the 100 million words in total), which means Emoji has been highly frequently used in socio-emotional groups on Wechat. Emoji can function in a similar way as non-verbal behaviors do in face-to-face communication in real life to regulate online interaction (Luor et al., 2010). In reality, people laugh or even raise their voice to disguise or decrease embarrassment on some occasions, and on the net, people can use a "grinning face" to serve the same function, and even multiple grinning faces to intensify or strengthen this communicative effect, as over 70% cases did as a emotion signal or emotion intensity enhancer in the corpus of the present study. This finding shows emoji can serve the major communicative functions that nonverbal behavior does in the real world. So high frequency of Emoji use may result from its high functionality and efficiency.

The 7 functions of emoji can be further classified into 3 more general categories of interlocutor devices, emotion signifier (function 1 and 4), interaction device (function 2, 3 and 5) and communicative effect device (function 6 and 7). The count of emotion signifier amounted to 50.8%, and that of interaction devices 47.8% of all, the total of which makes up the overwhelming majority of intents of Emoji use. So emotion signifier, which emoji was originally invented for, and interactional devices, which seem subtle and polite to maintain conversation flow, are generally the two major functions of Emoji.

What is interesting in the findings is that, none of top 3 most frequently used emojis on twitter, i.e., ❤️ (heart), 😂 (face with tear of joy, also Word of 2015) and 😒 (expressionless face), in a survey on NBC News in June 2014. is in "the most popular" list (Table 2) or any other lists (Tables 3, 4 and 5) in the present study, to be specific, it's barely in top 10. It is clear that two of the top 3 twitter emojis are facial expressions and "the heart" means "like", an explicit expression of personal emotion. While Chinese favorite emojis are mainly gestures instead of facial expression. It's unfair to conclude Chinese people are serious due to absence of facial expression in the favourite emoji list, but this finding accidentally coincides with the stereotype of Chinese showing less facial expression than people of some other cultures. Additionally, laughter was regarded as an efficient resource and effective device for many moments that can be difficult to cope with in WhatsApp (also a social App) conversations (Petitjean & Morel, 2017). However, in the present study, laughter is not as functional as "thumb-up", ranking the first in the "favorite" list, which plays a role in almost all functions except irony. This emoji can precede or follow texts, functioning as compliment,

Table 3 Top 3 most frequent Emoji as attitude/emotion signal

Image	Name	Number
🌹	Rose	150
👍	Thumb-up	120
👏	Applause	66

agreement, positive appraisal, encouragement, and congratulations. It can also be used alone. A standalone thumb-up is interactional "machinery", acting as a topic transition and a conversation closure. The predominant usage of thumb-up shows that the safest technique to interrupt, intrude or start a conversation may be an approval of the idea of either existing party. Petitjean & Morel (2017) found laughter in online conversations works in a similar way to face-to-face communication. If virtual world really mirrored the reality, it could be inferred that Chinese people tend to give others a thumb up when they need to give a positive feedback. But in the real world, thumb-up is not a popular managing resource or technique so frequently used among Chinese people (adult-kid communication is another issue). The same is true with rose, which also ranks high in lists above. That is, sending flowers is just a behavior limited to people of specific relations in Chinese culture. It far less frequently occurs than on the net, so does "Chinese greeting". Therefore, Emoji, as a communicative online device, cannot be perfectly mapped to the real world, at least in China. People tend to use exaggerative Emojis, or to overgeneralize specific social behaviors supposedly limited to a specific interpersonal relation to a larger population online, to compensate inadequacy of communicative resources to achieve an effect or goal comparable to off-line communication. This phenomenon could be due to people's overuse of positive emojis, yielding mitigation of positive emotion effect (Wu, Guan & Gao, 2016).

Emoji can be positive, negative and neutral in connotation, signifying the corresponding emotions and techniques applied to a conversation. For example, 😁 (grinning face) and 😊 (smiley face) are originally created to express positive emotions and usually used in a positive way, while 😠 (angry face) and 🙁 (frowning face) are basically used in a negative way, denoting emotions of anger and disapproval or grievance. Other types of emoji are created to denote neutral meanings just as text supplements, for

Table 4 Top 3 most frequent Emoji as turn taking/giving

Image	Name	Number
👍	Thumb-up	249
🌹	Rose	51
😁	Grinning face	21

Table 5 Top 3 most frequent Emoji as backchannel device

Image	Name	Number
	Thumb-up	87
	Traditional Chinese way of greeting and thanks	51
	Handshake	30

example, (a cup of coffee) means "please have some coffee" or "I'm having a coffee". In the present study, there were 25 positive, 15 negative and 6 neutral emojis, and independent sample t-test of positive and negative emoji count was conducted for the difference (Table 6).

As is shown in Table 6, positive emojis are far more frequently used than negative ones, t (37) = 1.5, ($p < .05$). This finding is seemingly not consistent with that of Dyer et al. (1995), which showed that flaming was found more often in computer mediated communication than in face-to-face setting. This discrepancy may result from the different communication platforms, where the interlocutor may not be able to be easily identified by the audience in their study, such as computer-based anonymous questionnaire, chat room and interview, and social factors played a role.

Prevalence of positive emoji in the present study may result from both social and psychological motives. Derks et al. (2008) found that Emoji did modify online information interpretation such that a positive message with a "smile" was rated more positively than a same message without, and a negative message with a frown was found more negative than a same message without. Unlike a "grinning face", which can both weaken and strengthen the illocutionary force, regulating it in both directions, such negative emoji as "frown" and "angry" can only shift the message in the negative direction and in stronger magnitude due to individual "emotional perception preference"(higher sensitivity to negative emotions) (Walther and D'Addario, 2001; Luor et al., 2010). Obviously, people are likely to use less negative emoji to avoid negative interpretation, so as to maintain a traditional interpersonal distance, avoid losing face, and to enjoy intimacy and creativity (Miyake, 2007), as well as to maintain positive group rapport, establish positive personal online status.

Conclusions

Major conclusions drawn from the present study are the followings. First, high frequency of Emoji use may result from its high functionality and efficiency. Second, Emoji are basically used as emotion signifier and interaction device. Third, Chinese preference to Emojis is somewhat different from other people, and Emoji, as an online communicative device, may be used in an exaggerative and generalized way. Finally, the

Table 6 Independent sample t-test of positive and negative emoji count

emoji	Mean (times)	SD	t	df	Sig. (2-tailed)
Positive ($N = 25$)	60.0	101.6	1.5	37	.031
Negative ($N = 15$)	17.1	19.2			

frequent use of positive Emoji, compared with the negative, may be attributed to social and psychological motives.

This study presents pragmatic functions of Emoji and interactional skills that people mobilize to communicate within an online community. Emoji functions as a window on how online social life participants display expertise in the management of internet-based conversations, and thus deserves further investigation.

Limitation

The major limitation of the present study is that the corpus size is far smaller than a standard corpus. In terms of the size of the corpus, if the corpus intends to represent infinite language materials or at least a part of the language, the more samples we collect, the more representative the corpus is (Yang, 2002). To our knowledge, standard corpra for any purpose containing and tagging emojis is not available yet, and such programs as Wordsmith is not able to process emojis at present, so a self-constructed one is needed for the current study. This corpus cannot be too small of course, but should be limited to a manually manageable length. Therefore, a larger corpus of emojis needs to be developed for future studies, as well as that of memes and GIFs.

Publisher's Note

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