The Emoji Linguistic Functions in WeChat among Different Gender

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Abstract— In the 20 years since the first set of emojis was released, it has become increasingly popular to use them in text-based online communication to express emotions. In this study, a mixed design approach was employed, utilizing both a corpus-based tool and a questionnaire. Over a period of approximately 4 months, undergraduates at a Chinese college were observed to explore how the five functions emerged from the collected data, based on Jakobson's Model. This paper analyzes the six linguistic functions of emojis, namely emotive, conative, phatic, poetic, referential, and metalingual. The questionnaire reveals differences in emoji usage between male and female students. The researcher suggests that further studies should be conducted to investigate other influential aspects of emoji usage.

Index Terms—Emoji, gender differences,Linguistic functions.

I. INTRODUCTION

  Communication is what people could not avoid in daily life. They also need to exchange feelings and emotions (Banikalef & Rababah, 2018). As technology progressed, the world became a small village, and it is much easier for people to communicate with each other. Social media platforms are a good proof of that. As a representative of instant messaging software, WeChat quickly entered the public's view，and attracted a large number of users in a short period of time. Among the rich and diverse social functions of WeChat, there is an important one that cannot be ignored. It set off a new way of network social networking, that is, the function of sending emojis. Sending emojis to each other has become a trend in WeChat. Not only can emojis convey meaning more accurately and vividly, but the use of emojis also adds activity to the online social activities themselves. The influence of WeChat emoji is not only to change the atmosphere and social mode when we communicate, but also to change the thinking mode and expression behavior habits of netizens in the process of interaction. As the wide spread of using emojis, there is a question raised by researchers: Whether the use of emojis create a new language?

 In recent years, emoji have become a hot topic for research, with the volume of papers increasing gradually from 2015 and peaking at 2017-2019. Research mainly comes from the fields of computer science and communication science. Marketing,behaviora science, linguistics, psychology, medicine and education are also involved. Research mostly uses empirical analysis, focusing on the diversity of individuals, cultures and platforms in the use of emoji, the attributes and characteristics of emoji, their functions in communication and the application of emoji in various research directions. Table 2 systematically summarizes the main research fields, research topics, main conclusions and research methods for emoji.

In addition, a lot of researches on emoji are cross-field. For example, as emoji are platformor system-dependent they are often used in online communication. Due to its visual characteristics or platform differences there would be emotional or semantic ambiguity in communication. Manyresearchers from computer science try to solve this problem using a computer method and a series of algorithms or models for semantic disambiguation and sentiment analysis have been developed. Besides, the use of emoji is associated with psychological differences. Some researchers in the field of psychology have also focused on emoji usage to search for the relationship between user's behavior and personality traits. What's more, emoji is used in marketing activities to enhance interaction and promote consumerswillingness to purchase. In order to make better use of this symbol researchers from the field of marketing draw on relevant theories in the field of linguistics, especially in rhetoric, to enhance the appeal of emoji in marketing activities.

Emoji originated from smiley,which first evolved into emoticons, followed by emoji and stickers in recent years. Smiley first appeared in the 1960s and is regarded as the first expression symbols. Smiley is a yellow face with two

dots for eyes and a wide grin which is printed on buttonsbroochesand t-shirts.By the early 1980s, this symbol had become widespread, emerging as a permanent feature of western popular culture(Stark and Crawford,2015).

Emoticons were introduced in 1872 and use ordinary punctuation marks from a standard computer keyboard to build up a representation of a face with a particular expression(Zhou et al., 2017). They are a paralinguistic element(Lee and Wagner,2002; Jibril and Abdullah 2013) often used at the end of a sentence (Sakai, 2013). Prior to the existence of emoji, users of Instant Messaging(IM) would often use emoticons Like non verbal clues in face-to-face communication, emoticons can help clarify intentions in ambiguous contexts(Thompson et al.,2016) express emotions (Walther and DAddario,2001; Aldunate and Gonzálezibáñez, 2016; Wall et al., 2016; Esposito et al., 2017) and improve the efficiency of communication (Dunlap et al., 2016) Besides,emoticons possess nonverbal communication functions They can help those receiving them correctly understand the sender's emotion,attitude,and level ofattention(Lo,2008), bring enjoyment (Chen and Siu, 2017),promote interaction (Aldunate and Gonzálezibáñez,2016)and communityidentity(Cho,2016) In practice, gender, and cultural differences lead to different preferences for emoticon usage (Wolf,2000; Jack et al., 2009). It has also been suggested that emoticons could be applied to real life, for example in fields such as emotional monitoring(Carvalho et al., 2009; Barbieri et al., 2014), psychological testing (Tan et al., 2018) and designing signs (Sodikin, 2018).

A linguistic model of interpersonal communication outlined in 1960 by Jakobson. He outlines what he regards as the six constitutive factors in any act of verbal communication. This study explores how emojis are used by different genders in WeChat communication. The study tries to answer the following research questions:

1). What are the language functions of emoji?

2). How emojis are used by different genders in WeChat?

II. Literature Review

A. Jakobson's Functions of language

According to Roman Jakobson, we can divide the functions of language into six factors which are required for communication: (1) context, (2) addresser (3) addressee, (4) contact, (5) common code, (6) message.

Each of these six factors has a different function of language. The diversity in these functions is a result of a different hierarchical order of functions. Depends on Jakobson's in Noth (1990, p. 185), there are six functions of language :

Referential function corresponds to the factor of Context and describes a situation, object or mental state. The descriptive statements of the referential function can consist of both definite descriptions and deictic words, e.g. "The autumn leaves have all fallen now." Similarly, the referential function is associated with an element whose true value is under questioning especially when the truth value is identical in both the real and assumptive universe.

Emotive function relates to the Addresser (sender) and is best exemplified by interjections and other sound changes that do not alter the denotative meaning of an utterance but do add information about the Addresser's (speaker's) internal state, e.g. "Wow, what a view!" Whether a person is experiencing feelings of happiness, sadness, grief or otherwise, they use this function to express themselves.

Poetic function focuses on "the message for its own sake" (how the code is used) and is the operative function in poetry as well as slogans.

conative function engages the Addressee (receiver) directly and is best illustrated by vocatives and imperatives, e.g. "Tom! Come inside and eat!"

Phatic function is language for the sake of interaction and is therefore associated with the Contact/Channel

factor. The Phatic Function can be observed in greetings and casual discussions of the weather, particularly with strangers. It also provides the keys to open, maintain, verify or close the communication channel: "Hello?", "Ok?", "Hummm", "Bye"...

Metalingual function is the use of language (what Jakobson calls "Code") to discuss or describe itself.

B. Related Studies

The researching field about the culture of emojis abroad has some intersections with those domestic, mainly related to these fields, Psychology, Culture, Communication and so on, and most of these adopt the method of empirical analysis. The main research purpose is to investigate the use conditions and use motivation of emojis in the network interaction, such as researching the reason why people are like to take advantage of network emojis as well as the influence resulted from emojis in network communication. However, few scholars have studied the influence of network emojis on users' expression from the perspective of linguistics.

In the aspect of meaning construction for emojis, the article, 'Blissfully happy o' or 'ready to fight':Varying Interpretations of Emojis written by Hannah Miller(2016), has stated the meaning construction of different emojis in the different social cross-platform even in the same medium. Meanwhile, the article, the Emoticons' influence on advice taking written by Jinyun Duan (2018), has found the result that emojis during the process of communication with others.

The data of the research collected by Dresner and Herring (2010) from personal emails, personal chatting, public chatting and comments on public forums has found that drawing from the speech act theory, the main purpose why people use emojis is not only to express the original meaning of the emojis, but also to express the more deep meanings, for example, someone use one emojis to deliver a certain idea in a emphasizing way. However, it also found that not all emoticons are regarded as indicators of emojis.

In the aspect of the gender difference for emojis. The article, On-Line Smiles: Does Gender Make a Difference in the Use of Graphic Accents? Written by Witmer and Katzman (1997) tried to find out the question whether it is possible to decide the gender of a message sender from cues in the message in computer-mediated communication (CMC). And they have found that women are likely to use graphic accents than men do in their CMC and women prefer to challenge as well as flame than men. Then, Wolf (2000), in his article, Emotional Expression Online: Gender Differences in Emoticon Use, has conducted the similar text on women and men who all work for journalism and drawn a conclusion that women use emoticons for the sake of unity, support, assertion of positive feelings, and thanks, while men are absent from these dimensions and use emoticons for teasing or sarcasm. Arafah & Hasyim (2019) investigated the emoji linguistic function in conversations on WhatApp. The study has made use of a questionnaires, and photo documentation (screenshot) of conversations using emojis on WA social media. The results of the study concluded that emojis are part of the grammatical elements of language in communicating on social media. AL Rousan and Remill (2017) revealed that males and females differ in their use of language in face to face communication and in Computer-mediated Communication.

Emoji can help users to convey feelings and understand the meaning of a text but the use of emoji also brings ambiguities in the interpretation of communicationresulting in inefficiency. Although emoji have visual similarity their interpretation is influenced by cultural background technical differences and their own visual characteristics(Bich-Carriere 2019).The specific meanings that users want to express byemoji maybe different from their official definitions resulting in different interpretations of the same emoji(Miller et al.2016)(Table 5). For example, some people interpret this emoji() as"prayer and others interpret it as "clapping hands". In this case it is dificult for the two sides to understand each otherwhich reduces the efficiency ofcommunication Berengueres and Castro(207) found that there are differences in understanding negative emoji. For the same negative emoji,the sender's emotional feelings can be 26% different from the receiver'sResearch done byRiordan(2017a) shows that the degree of misunderstanding offacial emoji is higher than that of non-facial emoji, but that both are related to the degree of information ambiguity. When used across platforms, the differences in how people interpret emoji emotionally and semantically will increase because of platform display differences (Miller et al.,2016). The difference in how emoji are understood results in ineficiency in communication, leads to the interruption of discourse and destroys interpersonal relationships(Tigwell and Flatla, 2016).

III. METHODS

This study has used the mixed method approach to investigate gender differences and language functions of emoji. The population of the study consists of about 300 male and female in China. All of these members are mostly at the same age. To collect data, the study has adopted a questionnaire to answer the second research question. The current study has collected adequate comments and posts in order to answer the first research question.

IV. FINDINGS AND DISCUSSION

A. Function

The most common manifestation of the emotive function used between male and female in this study is the emojis with texts. Simple expressions such as 'surprise' , to express happy which was used about 38 times. Another way that emotive orientation presents in the emphatic prolongation of vowels. Even with utterances which might otherwise be classified as belonging to other functions, the infusion of an emotive tone or tint can shift the orientation towards the speaker and imbue the message with new meaning.

The Emotional Functions of Emoji Because they are non-verbal cues with rich emotional meanings, emoji are an important medium for interaction and emotional communication on the Internet. Emoji can express or enhance emotions(Gülsen,2016)Jaeger and Ares(2017) analyzed 33 facial emojis and found that most emoji can express one or more emotions.The rich emotional meaning of emoji makes them a key area for researchers who analyze their emotions and develop emoji emotional lexicons By artificial annotating, Petra et al.(2015) divided emojis into positive, negative and neutral according to their emotional distribution, and found that most emojis were positive, but there were also some emojis which can express irony or satire(Vanin et al., 2013).Due to the subjectivity of human annotating some researchers have proposed the automatic construction of emoji lexicons.Fernandez-Gavilanes et al.(2018)automatically constructed an emoji lexicon based on the official definitions in emojipedia.

Because of their rich emotional meaningsemoji are often used to express emotions in online communication. In general users tend to use emoji in positive messages and to use them less in sad or angry messages (Cheng,2017).Different emoji affect people's attention and responses in divergent ways(Hjartstrom et al.2019). Although both facial and non-facial emoji can express emotions (Riordan,2017a),facial emoji outperform non-facial emoji (Jaeger et al.,2019). Using non-facial emoji can bring about positive emotions, especially joy, but it can't change the valence ofthe message(Riordan,2017b).Different combinations ofemoji also have subtle differences in emotional expressionfor example López and Cap(2017) found that when combining frog emoji or hot beverage emoji with other emojis there will be subtle but observable emotional changes.

Conative function engages the Addressee directly and is best illustrated by vocatives and imperatives. The conative function is directed towards the addressee. This function is the purest expression because the sentences were carefully chosen, and it asks people to do something specific.

Phatic function has been noticed clearly when emojis were used as a nonverbal communication in the chat. It denotes or relates to language used for general purpose of social interaction, rather than to convey message, ask questions, or utterances such as hello, goodbye etc....

As observed many of emojis used with message's texts among people, the researchers find that referential function refers to descriptive and contextual information to events and facts that have occurred in all the world that allow someone to express idea. Moreover, it is dominant in an utterance primarily to open a new conversation and this function determines the location of the event.

Metalingual function is used when the addresser and the addressee need to use the same code that means same language. Also it is dominant in an utterance oriented at language itself,, which is engaged in the work of negotiating meaning other utterances. The metalingual function is used when the addresser and the addressee need to check whether they use the same language that use speaking together or the same code to reach an understanding. Also some of emojis could have ambiguity for the addressee such as angry emojis.

The Semantic Function of Emoji

In addition to expressing emotions emoji are also used to convey semantic meanings in communication(Naaman et al2017) They can play the role of non-verbal cues to help understand the overall meaning of messages in CMC(Walther and DAddario2001; Jibril and Abdullah 2013).There has been a lot of discussion about whether emoji could become an independent language. In addition,due to the diversity and similarity ofemoji semantics, many researchers from the field of computing pay attention to the word sense disambiguation task of emoji.

Some research suggests that emoji form an independent language. They have a semantic function and visual rhetoric function, can convey meanings as an independent expressing modality (Jibril and Abdullah 2013),and,through the combination of different emoji, can express subtler semantics(López and Cap 2017).Compared with plain text emoji are richer in semantic meaning (Ai et al., 2017), and have semantic similarity in different languages (Barbieri et al.,2016b).At the application level, Khandekar et al.(2019) developed the social media app called Opico to explore the possibility of"emoji-first"communication, which proved that emoji can be used independently in communication without the need for text. However, some researchers suggest that emoji can't be used as an independent language.Lee et al.(2019) found that emoji are similar to the radicals of Chinese characters.Alshenqeeti(2016) argues that emoji is essentially a form of visual paralanguage.

B. Different gender with different preference

First of all, there are significant gender differences. Although males and females understand the function of emoji similarly(Herring and Dainas, 2018), females use emoji more frequently and positively (Prada et al.,2018) while males use more types of emoji (Tossell et al., 2012). However, this trend varies according to communication situation. In public communicationwomen are more likely to use emoji while in private communication the opposite is true (Chen Z. et al., 2018). In terms of the cognition of emoji, females perceive emoji as more familiar, clear and meaningful (Rodrigues et al., 2017). Male users prefer to use the same emoji to enhance emotional expression(Chen Y. et al., 2018). When men and women use the same emoji, the recipients feel different emotions. Women who send messages containing affectionate emoji are considered more appropriate and attractive than men, and when men send messages containing less affectionate but friendly emoji messages, they are considered more appropriate and more attractive than women (Butterworth et al., 2019).

Language symbols reflect the differences and the status among gender. Tencent released a large number of emoji users in 2014 by collecting emoji data in the emoji store. According to the report, users of different genders have favorable types of online emojis. Language has do some distinguish as well as rules in gender. It is presented to be the unmarked male language and marked female language in English. As communicating in the language, the gender identity of the speaker makes their language labeled the gender(Wang Fang 2011:76). in ancient China, women were restricted by rites so that their activities were mostly confined to the family. While men enjoyed more social freedom. The concept of gender roles is that men should own independent enterprise, act rudely as well as freely, and dare to compete, that is they have 'masculinity'. however, women should be compassionate as well as sensitive, and good at home management as well as parenting, gentle as well as considerate to people, gentle behavior trap and so on, that is, they must have the 'femininity'. As a result, people gradually act in accordance with their own gender role norms in the social process. And due to people's gender differences, it refers to the quality characteristics, ways of thinking and behavior patterns that conform to certain social expectations. Therefore, under the influence of ancient Chinese thoughts and the culture, the current use of emojis shows more or less is in the same pattern. Under the influence of innate personality, women prefer some cute, warm and animal-like emojis. Men, on the other hand, like to use some funny, mischievous and vulgar violence.

V. CONCLUSION

At present, research focuses on the description of users' preference for emoji, but fails to go deeply into the

underlying reasons. Emoji such as "heart" and"tears of joy" were found to be more popular, but whether their popularity is related to specific cultural traits has not been studied.Users preferences for emoji are influenced by many factors such as contextual information, interpersonal relationships, familiarity with emoji and personal interpretations other than official definitions which are all worthwhile factors to explore.

In the field of linguistics, research focuses on the pragmatic functions of emoji and the possibility that they could

become an independent language. Emoji have been identified as having semantic properties, and can be used both as an independent language and as a component of a paralanguage providing users with a means of communication and promoting speech acts and interaction (Jibril and Abdullah,2013; Alshengeeti,2016; Na'aman et al., 2017).There are pros and cons regarding whether emoji can become an independent language. Some researchers believe that emoji possess visual rhetoric and text functions and have more subtle semantics and for this reason deem that emoji can independently express meaning(Jibril and Abdullah 2013; López and Cap, 2017). An application was developed to verify the possibility of emoji-first communication (Khandekar et al.2019). Other researchers think emoji can't be regarded as an independent language because their meaning largely depends on surrounding text, and only when they are combined with the text can complete semantics be expressed(Zhou et al, 2017).

In light of the findings given previously, it has been found that the respondents can easily recognize emojis to the ease of their use by both senders and receivers. Moreover, the participants use emojis to maximize the effect on the audience. Furthermore, the participants intentionally use emojis since they are fully aware of the fact that emojis do have different meanings. The majority of the sample can easily interpret the meaning of the emojis if used or sent by others. The interpretations differ from one person to another depending on the age and gender they attend as it is found that gender factor which effect on these emojis usage on both parties (senders and receivers). this may have to do with the nature of the human beings according to the difference in both gender and age. Given the audience's preferences, the findings have shown at least two main findings. First, in terms of use in the given situations, the respondents are able to rank their preferences; second, they are able to determine the distractor in each context. It is found that "Gender", as a demographic factor, has the most statistically significant effect on the sample in terms of preferences. The other demographic factors affect the choices of the population sample, but gender is the most dominant one in addition, the findings have shown that emojis do have functions and interpretations and that synonymous interpretations have turned to differ from one person to another for it is found that Faculty, it should be noted here that in light of the given Relevance Theory, the researcher attempted to logically justify the above findings, knowing that in light of the given difference approach and dominance approach, the researcher attempted to justify further studies to be carried out on the language functions of emoji in other social media platforms.

In general, the continuous use and development of emojis in the network and interpersonal communication is an inevitable trend. Before the emergence of new digital media, the human language media system was based on spoken language, gestures, and patterns and symbols endowed with meaning. On this, hieroglyphics appeared, which made information and culture not be easily lost and difficult to replicate.

VI. PUBLICATION PRINCIPLES

The contents of the journal are peer-reviewed and archival. The journal INTERNATIONAL JOURNAL OF ENGINEERING AND INNOVATIVE TECHNOLOGY (IJEIT) publishes scholarly articles of archival value as well as tutorial expositions and critical reviews of classical subjects and topics of current interest.

Authors should consider the following points:

1) Technical papers submitted for publication must advance the state of knowledge and must cite relevant prior work.

2) The length of a submitted paper should be commensurate with the importance, or appropriate to the complexity, of the work. For example, an obvious extension of previously published work might not be appropriate for publication or might be adequately treated in just a few pages.

3) Authors must convince both peer reviewers and the editors of the scientific and technical merit of a paper; the standards of proof are higher when extraordinary or unexpected results are reported.

4) Because replication is required for scientific progress, papers submitted for publication must provide sufficient information to allow readers to perform similar experiments or calculations and use the reported results. Although not everything need be disclosed, a paper must contain new, useable, and fully described information. For example, a specimen's chemical composition need not be reported if the main purpose of a paper is to introduce a new measurement technique. Authors should expect to be challenged by reviewers if the results are not supported by adequate data and critical details.

CONCLUSION

A conclusion section is not required. Although a conclusion may review the main points of the paper, do not replicate the abstract as the conclusion. A conclusion might elaborate on the importance of the work or suggest applications and extensions.

singular heading even if you have many acknowledgments. Avoid expressions such as "One of us (S.B.A.) would like to thank ... ." Instead, write "F. A. Author thanks ... ." **Sponsor and financial support acknowledgments are placed in the unnumbered footnote on the first page**.

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