

# Is Gender the Priming Factor? Examining Emoji Users' Behavior in WeChat among University Students in China

Mengyu Luo\*, Shiyun Zhu

College of Communication and Art Design, University of Shanghai for Science and Technology

\*Corresponding Author: [m.luo@usst.edu.cn](mailto:m.luo@usst.edu.cn)

Received: 2023-09-27

Accepted: 2023-12-19

Published online: 2023-12-31

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## Abstract

Nonverbal cues, such as emoji or emoticon, enjoy increasing popularity in computer mediated communication (CMC). These elements are used to compensate for the limited emotional expression lacked from face-to-face communication. Emoji, for example, has thus become a new medium to communicate and express emotions in CMC. WeChat, WhatsApp, Line, and other micro-messaging apps provide platforms for the frequent use of emoji in daily communication, especially among youngsters such as university students. This article sets out to explore emoji users' behavior, motivation, and the determinants. As a result, the article focuses on the following three key areas. First, it examines emoji users' real-life behavior from 96 university students' 7-day WeChat data. Second, it organizes answers from open-ended questionnaires by these 96 students and concludes three major motivations of emoji use. Last, it attempts to understand if individuals' demographic differences, especially gender, constitute a major factor in illustrating emoji users' behavior and motivation. The article adds a new dimension to the original framework of uses and gratification theory by combining individual factors to understand the factors influencing one's emoji usage and motivation. This research made a relatively detailed analysis into emoji usage, including not only the frequency, choice, location, variety and times of repetition of emoji but also the participants' chat partner's gender and their relation status.

**Keywords:** Emoji, Uses and Gratifications Theory, Computer Mediated Communication.

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## 1. Introduction

WeChat 微信 is a free-to-use messaging and calling application on mobile devices such as smart phones or tablet computers, similar to Line and WhatsApp. It is developed by Tencent Holdings Ltd. on January 21, 2011 in China. According to a research report published by Tencent, the number of monthly active users of WeChat, together with QQ, has reached 1336 million by September 30<sup>th</sup> and the corresponding number in 2015 is 700 million (Tencent 2023 Third Quarter and Annual Financial Announcement) making it the most active instant messaging application in China.

Monthly active users, according the Tencent's report, indicate those sending out at least one message during the past calendar month. WeChat is playing an increasingly important role in people's daily life because it provides a platform for all sorts of social behavior such as communication, purchasing, accessing news, playing games and so on. The arrival of this new home screen has also fundamentally transformed the way people live and perceive the world.

The focal point of this research is personal communication and how it is transformed by the new home screen of WeChat. When there were no screens or distances, face-to-face communication sends out message mainly through verbalelements. Moreover, with the help of other non-verbal factors such as tones, facial expressions and body languages, information and emotion are better and more correctly communicated. When it comes to online communication, the add-on effects of communication are greatly reduced leaving the communication to plain texts. However, to improve the quality of communication and foster better emotion delivery, more and more nonverbal symbols are used and created such as emoticon, emoji, and GIF/sticker. This paper focuses on the use of emoji in WeChat because emoji is more frequently used than emoticon and it usually has a predefined name/ID which makes the coding process in research possible. GIFs in WeChat are also widely used but they are way too complicated since they can be created by both professional artists and users using their own picture. This article seeks to answer the following two key questions: (1) Why do university students in China use emoji when they communicate via WeChat? (2)How is emoji used by university students in China?

When we start to make sense of the question—why university students in China use emoji, we think of uses and gratifications theory. It shifts the attention to users and examines the motivation of communication with the help of emoji. The uses and gratifications theory is a user-centered approach to perceive the psychological aspect of emoji usage. Nonetheless, the uses and gratifications theory may over-emphasize on users and overlook the functions of emoji itself. As a result, we brought in the concept of affordance to shift our attention back to emoji and attempts to answer our second research question—what is the affordance of emoji in WeChat communication? This question can also be interpreted as how is emoji used in WeChat communication. Affordance is a term from cognitive psychology and is widely used in psychology and design. Affordance indicates the connection between an object and person or between emoji and its users as the case in point. In other words, affordance examines the functions of emoji identified by WeChat users. Emoji is there when you first installed the application of WeChat but there were no instructions of how to use it. The usage of emoji is left to the free will of WeChat users. The affordance of emoji is in essence the functions of emoji recognized by users, which leads to certain behavior of emoji usage in emotion and information communication.

## **2. Theoretical Framework**

### **2.1 Emoji**

#### *2.1.1 Historical Development*

Emoji is believed to be the successor of emoticon and kaomoji. Emoticon generally refers to a sideways face made with marks from ASCII (American Standard Code for Information Interchange) typed via a computer or cell phone keyboard, such as :-) or :-P. It is first brought to the public by a professor from Carnegie Mellon University—Scott E. Fahlman on September 19th, 1982. He used a sideways face or emoticon, as is known today, to indicate whether the content of a poster on an information board was serious or a joke. Kaomoji 顔文字 is believed to be the right-side and enriched version of the typical emoticon, such as ^o^ or (///∩///). It starts from Japan and is now used across different cultures (Thompson and Filik, 2016).

In the late 1990s, emoji is proposed by a worker from a mobile operator in Japan—Shegetaka Kurita to make better mobile communication (Nelson, Tossell, & Kortum, 2015; Rodrigues, et. al., 2017; Yu & Zhao, 2024). Emoji gradually developed into an independent form of emotional expression in computer-mediated communication (CMC) such as emails and messaging applications on smart phones. The letter “E” in emoji means picture in Japanese and “moji” means character in Japanese. Emoji refers to the “graphic symbols with predefined names/IDs and code (Unicode)” (Rodrigues, et. al., 2017: 2) which now incorporates eight categories: smileys & people, animals and nature, food and drink, activity and places, objects, symbols and flags (emojipedia.org).

#### *2.1.2 Emoji Use and Perception*

Emoticon, kaomoji and emoji are all created and used to compensate the short of nonverbal cues in CMC (Yang, 2020). They are meant to express and understand emotion sent and received with emoji. Both emoticon and emoji are widely studied in different disciplines, such as psychology and linguistics. In terms of the relation between emoticon/emoji and perception, researchers (Koch et. al., 2022; Wall, et al., 2016) find that the use of emoticon influences impression formation of its user as more friendly and aggregable. Ganster et. al. (2012) reveals that emoticon will help participants remember the content better. Emojis is also effective in rebuilding trust through apology in online communication (Yang, 2022). Luangrath, et al. (2017) investigate emoji as a textual paralinguistic (TPL) and develop a typology of TPL to view the preconditions and consequences of TPL use by different brands.

Emoji usage involves two parts of emotion communication, expression, and perception. Expression and perception are two indispensable and interactive components in emotion communication. Expression of emotion is only complete when receivers can perceive it. In Glazer's (2017: 3620) words, "behaviors express emotions by making them perceptually manifest". Perception is usually divided into perceiving and perceiving-as (Hanson 1958; Glazer, 2017). Perceiving emphasizes on the presence of an object while perceiving-as implies the ability to sense or be aware of that object (Dretske, 2006; Smith, 2015; Glazer, 2017). The notion of perceiving-as resembles the concept of affordance. The concept of affordance is commonly seen in psychology to describe quality of an object that allows for action by an individual. For example, functions of an object can be perceived while affordance of an object is the function perceived by users as applicable by themselves or motivation behind users' behavior.

As for the determinants of use and perception of emoticon/emoji, some (Fullwood & Martino, 2007; Tossell, et. al., 2012) identify that gender is a variable that will affect the perception or amount and variety of emotion usage. While others (Fullwood, Orchard and Floyd, 2013) found no difference between genders in emoticon or emoji usage. Scholars found that emoji is often placed either in the end of a message or between clauses (Sugiyama, 2015) making emoji function as a punctuation mark. Markman and Oshima (2007) observe a similar situation of emoticon function as punctuations of the message in online communication to suggest and clarify the emotion within the sentence.

## 2.2 Uses and Gratifications Theory

### 2.2.1 Psychological Dimension of Communication Effect

Why and how do people use emoji in WeChat? This question calls for a psychological analysis of users' motivations. As an influential theory in media studies, uses and gratifications theory (U&G) investigates questions of why and what people use certain media or media content for. The theory also argues that individuals have different motivations and purposes of using the same media. The U&G focuses on how individuals' needs or demands are gratified using certain media. Furthermore, it emphasizes "individual differences during the process of media uses and effects" (Wang & Sun, 2009: 80; Rosengren, 1974). Prior to the inception of the U&G theory in early 1940s (Ruggiero, 2000), scholars of media studies normally concentrated on what effect media have on audience. The U&G theory shifts the attention of scholars to the motivations behind the use of media by focusing on purposes of individual media use and usage of media content as well. The U&G also argues that "different people can use the same mass medium for very different purposes" (Roy, 2009: 878; Severin and Taknard, 1997). Katz, Blumler, and Gurevitch's (1974) formally introduce the U&G

theory. Katz et al. (1974) believe that media users are active and point out three factors shaping and determining individuals' use of media: psychological indications, social factors, and environmental situations.

### *2.2.2 The U&G in Online Communication*

In new media age, the U&G extends its scope and is now widely combined in studies of Internet use and new media adoption (Kim et al., 2011). Several researchers (Lin, 1999; Roy 2009; Ferris, et. al., 2021) have applied the U&G theory to understand the psychological motivation and individual behavior of Internet use. Among these researchers, Wang & Sun (2009) apply U&G theory to examine the internet use among international Chinese students abroad. Among factors and motivations of internet use, authors (Wang & Sun, 2009) focus on loneliness as "one of important individual dispositions influencing media uses and outcomes" (Wang & Sun, 2009: 80; Finn & Gorr, 1988; Perse & Rubin, 1990). Papacharissi and Rubin (2000) also apply U&G in studying Internet use and conclude five factors that motivate Internet use: interpersonal usage, information-seeking, killing time, convenience, and entertainment.

There are also a few research that apply the U&G theory to study motivation and attitude of social media usage (Chang & Zhu, 2011; Ferris, et. al., 2021; Kim et al., 2011; Lien and Cao, 2014). Among these studies, scholars such as Chang and Zhu (2011), Sun et al. (2014) and Lien and Cao (2014) use the U&G theory to examine the social media in China such as WeChat and Sina Weibo. Results from these studies reveal several psychological factors that determine the use of social media in China such as information seeking and meeting new friends.

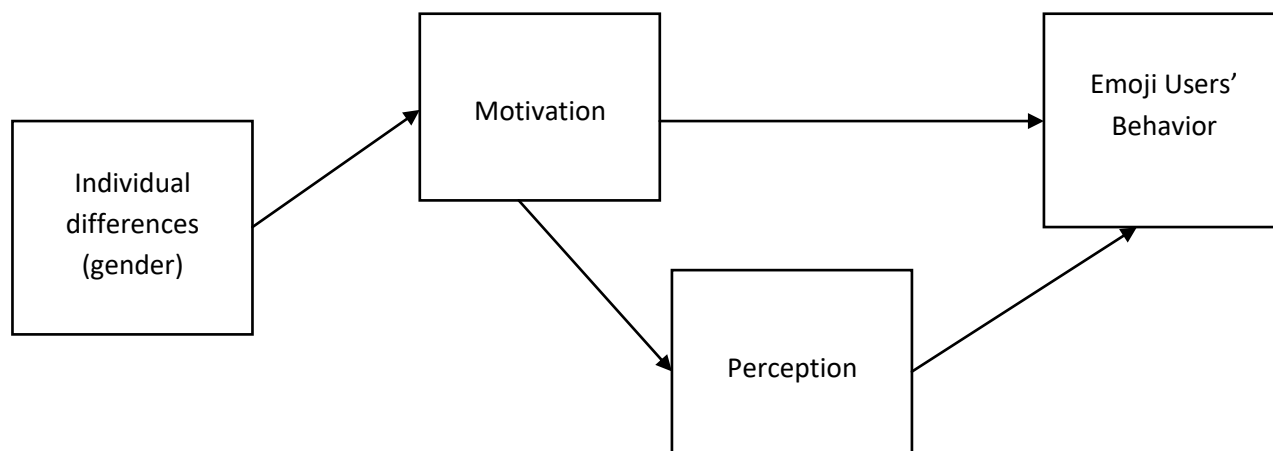
Emoticon and emoji are "a new medium to share daily narratives, emotions, and attitudes with others through ICTs" (Rodrigues, et. al., 2017: 2) but there is few research that applies U&G in study of emoticon/emoji use. Despite the lack of research using U&G in emoticon/emoji usage, existing research were conducted based on U&G model. These studies analyze motivations of emoticon/emoji usage in CMC and most of them seek to find variables that determine the motivation and behavior of emoticon/emoji usage.

### *2.2.3 Criticism of the U&G Theory*

However, the U&G theory does have certain limitations. First, it is accused to be a very atheoretical approach whose advocates "are inclined to turn this into a virtue, taking the line that if it can be measured it exists, and if it can be associated it is significant" (Elliott, 1974: 256). That is to say, the U&G theory criticized to be "simply

an approach to data collection" (Blumler and Katz, 1974: 14) and "a research strategy or heuristic orientation" (Weiss, 1976: 133) rather than a theory for research. Scholars later argue that the U&G theory "lacks internal consistency and theoretical justification and has weak predictive capabilities" (Roy, 2009: 879; Ruggiero, 2000). These accusations make sense to some extent in that the U&G theory is indeed based upon "a variety of hypotheses about specific communication phenomena" and provides "a testing ground for propositions about audience orientations stemming from more than one sociological or psychological theory" (Blumler and Katz, 1974: 15). To compensate, we are not going to make hypothesis in this research. We will, however, conduct our research based on open-ended research questions and empirical data from participants. We do not agree with the criticism of atheoretical approach of the U&G theory. It is a theory that helps us understand the communication effect from a different perspective. The inherent needs (Rubin, 1994) of media users make the U&G theory difficult to measure but the psychological dimension of communication effect does not make the U&G approach atheoretical. Nonetheless, the U&G theory does suffer from its user-oriented approach because "media users may not know the reasons why they chose to use what they are using and may not be able to explain it clearly" (Roy, 2009: 879; Ruggiero, 2000).

Difficulty to rate media users' emotion is one of the major limitations in U&G theory. However, "the classification and description of human emotions" are under dispute in almost all fields of study (Dai et. al., 2015: 778). Normally the classification of emotions is divided into two forms: discrete and continuous, with the former form indicating the major six emotions independently: anger, disgust, fear, joy, sadness, and surprise (Ekman & Power, 1999; Dai et. al., 2015). The continuous form of emotion refers to different dimensions of emotion within a continuous space. Mehrabian (1995, 1996) brought forward the famous PAD model arguing that almost all types of emotions can be described by three independent continuous dimensions: pleasure-displeasure (P), arousal-non-arousal (A) and dominance-submissiveness (D) (Dai et. al., 2015: 778). The PAD model was applied to the study of user experience and behavior in many disciplines such as marketing (Ratneshwar et al., 2001) and video games (Huang et al., 2017). However, our participants would find it very difficult to classify and describe their emotion in the use of emoji on WeChat because they will either think too much or think too little about their immediate choice of emoji. Moreover, our researchers will also have difficulty in locating our participants' emotion in academic coordination due to a lack of context. This is also the reason we focus on empirical data of emoji use in WeChat rather than questionnaires to calculate participants' emotion.



### 3. Methodology

This research is based on three experiments. The principle of these experiments is to reduce manipulative factors and bring in personal experience to the most. Participants in these three experiments are identical, including 96 (61 male, 35 female; age 18-22, mean age=19.62, SD=1.03) undergraduate students from University of Shanghai for Science and Technology from different majors ranging from freshmen to senior students. These participants are students enrolled in a public required course called "Creative Thinking Training". The course is divided into two classes (one on Tuesday, one on Wednesday) each containing an enrollment of 80 students. The experiments were designed to provoke creative and critical thinking on emoji use and were conducted during the lectures as a practice. Approval is asked before the experiments for the use of data in this research. Participants were informed that the data were collected anonymously, and they are free to join and withdraw from any stage of these experiments. To promote the participation of experiments, participants were told that they would receive general feedback of the experiments to enlighten their thoughts on nonverbal communication. As a result, there were 160 students enrolled in this course (80 in each class) but effective sample was reduced to 96, excluding those absent, present but did not hand in the results, those that do not use WeChat and those that did not provide valid data (incomplete results). These three experiments were all conducted in the two lectures of the same week starting from 18:00 to 20:25 on 19<sup>th</sup> September 2017 and 20<sup>th</sup> September 2017 respectively. All questions and requirements of experiment are identical among participants in the two classes.

### 3.1 Experiment 1 content analysis+interview

#### 3.1.1 Procedure

The experiments are made to compensate limitations of the U&G theory. Criticism is raised against users' understanding of their own motivations in media use. As a result; we would not ask participants about their motivation directly but will ask them to conduct a reflexive and empirical study of their own behavior on emoji use in WeChat. Study 1 was conducted along the following steps.

(1) To begin with, there will be a short training session lasting for about 15 minutes' brief introduction of what they are going to record and how are they going to record the data needed;

(2) Also, coding information was clearly illustrated and presented;

(3) Participants in both classes were asked to write down their ID (not real name but any form of identification to indicate a complete record of each participant since they may hand in more than one paper), gender, age, major, choice of science or liberal arts for their college entrance exam and hometown;

(4) After this, they were asked to take out their phone and open WeChat to identify the five accounts (individual or group) that is listed on the top of their conversation page in WeChat excluding public/official accounts that are generally used to receive public information, news or read articles;

(5) Participants were asked to notify the relation between themselves and the five accounts and gender of the accounts, except for the group account;

(6) Participants were asked to take notes of all the verbal and nonverbal information from messages sent by themselves with these five accounts across the past seven days, i.e. from 00:00, 12<sup>th</sup> September to 19:00, 19<sup>th</sup> September. To be keep manipulative issues to the lowest, the time range for participants in the second class was also set in accordance with the first class;

(7) Verbal information such as text was only asked to write down their word counts between each nonverbal information;

(8) Nonverbal information was coded and should be recorded by their coded name, among which emoji was asked to write down their ID (as their official/predefined name in WeChat), place of occurrence (in the beginning, middle or end of a message or sent out independently) and frequency. A typical example of data from Study 1 is shown below (Figure 1):

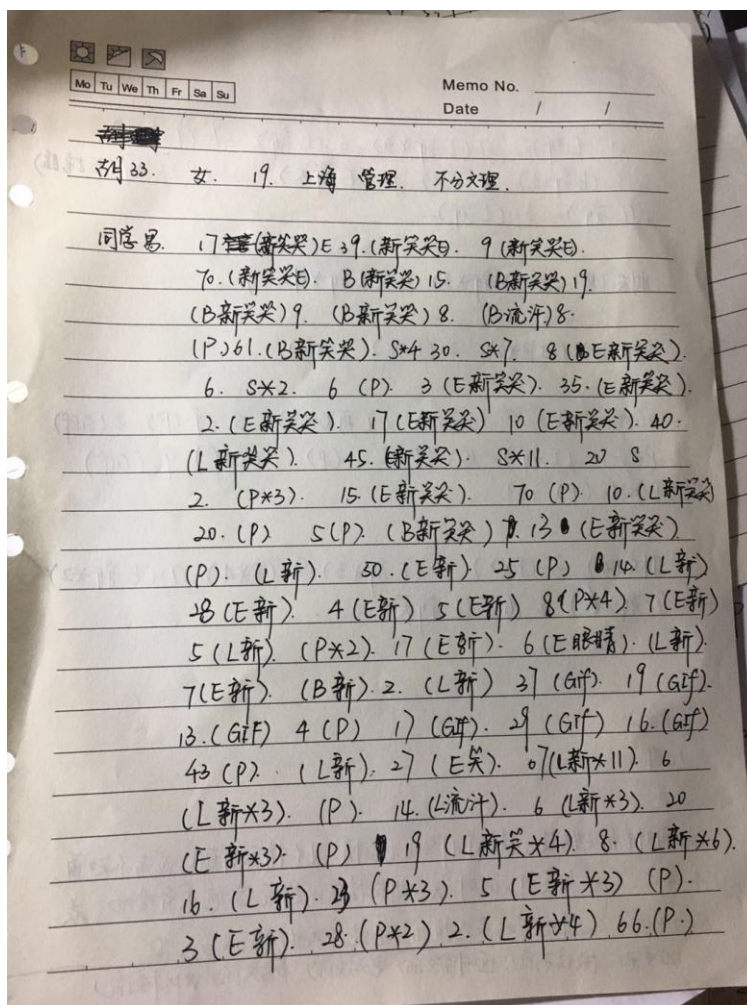


Figure 1. Example of the record of data in Experiment 1  
Source: Picture taken by the author

### 3.1.2 Coding

As indicated in previous section, all nonverbal information was asked to be recorded. Emoji used in WeChat refers to all the default emoji in WeChat when the application was installed for the first time. The default emoji in WeChat was asked to be recorded by its official name/ID as identified when it was picked in the import bar of WeChat. For those that do not show an official name when they were picked, a uniformed name/code was created and used. Here is the predefined name or code for the emoji (Figure 2). For other nonverbal information in WeChat conversation, such as GIF, picture, video, sound message, link of website, red pocket money/money transfer, they were coded but were not asked to record their content, place of occurrence etc. Here is the coding standard for other nonverbal information (Table 1).



Figure 2: Official Name/Code of Emoji in WeChat

	Code	Note
Emoji occurred in the beginning of a message	B	
Emoji occurred in the middle of a message	M	
Emoji occurred at the end of a message	E	
Emoji sent out independently	I	
Times of Repetition	*N	N is the number of an identical emoji sent out repeatedly at one time
Animated Emoji	GIF	
Picture/Photo	P	
Video	V	
Sound Message	S	
Link of Website	L	
Emoticon	Draw them out directly	Eg. :-)
Other	Explain with details	For all nonverbal information not listed in the table, please write them down and explain them briefly

Table 1. Coding for Nonverbal Information in WeChat

### 3.2 Experiment 2

After Experiment 1, participants were asked to continue with Experiment 2. This experiment is both a quantitative and qualitative approach with six open ended questions and 5-point Likert Scale survey questions. Experiment 2 bears resemblance with research methods such as interview or focus group but it was not conducted via verbal communication. Questions were listed on one PowerPoint page while participants were asked to review their data from Experiment 1 and write their answers of Experiment 2 down. The six questions in this study are listed below (Table 2).

The aim of this study is to understand the motivation and gratification met by participants using emoji in their WeChat communication. This study also seeks to understand the influence of official name of emoji to emoji usage. To reduce manipulative factors of this study, all answers were asked to write down rather than spoken out. Participants were also encouraged to fully explain their reasons to Q3 in this study.

Q1	Have you noticed there were official names for emoji before Study 1?
Q2	Have you ever been influenced by these official names to decide your choice of emoji?
Q3	Why do you use emoji in your conversation on WeChat?
Q4	Please rate the following sentence from 1 to 5: Emoji helps me better express myself.
Q5	Please rate the following sentence from 1 to 5: I often mention emoji in my face-to-face communication.
Q6	Please rank the order of the following ways of communication by frequency of usage in your daily life (from the most to the least): WeChat, QQ, Face-to-Face Communication, Telephone/Mobile Phone, Email, Letters/Other Written Communication, Other (Please specify).

Table 2. Questions in Experiment 2

### 3.3 Experiment 3

#### 3.3.1 Procedure

Experiment 3 is set out to understand the perception of emotion in emoji usage. Experiment 3 is composed of two made-up scenarios, each of which contains ten messages with identical texts but different emoji or punctuation mark at the end of the message. Participants were asked to sort the order of each sentence by level of emotion in that scenario. Participants were also required to write down their own version of message (with or without emoji) in case they are going to send a message to express emotions in each of the two scenarios.

As we have argued above, we are not going to ask our participants to classify and describe their emotions in emoji usage because media users may have difficulty in identifying their emotions based on academic criteria. Researchers will also find it hard to locate participants' emotions in emoji use within the professional psychological coordination due to a lack of context. Instead, we would create certain scenarios according to the PAD model and ask our participants to sort levels of emotion by order and to present a sense of personal experience in the research.

#### 3.3.2 Materials

Two scenarios are created in this experiment. The two scenarios are based on the single dimension of a continuous emotion, i.e. emotions identified as positive and negative (Dai et al. 2017). The single dimension model is applied to represent a typical example of emotion expression, negative and positive, in emoji use and to reduce ambiguity in participants' understanding of the scenarios. As a result, two scenarios (Figure 3 and Figure 4) are designed to test participants' perception of emotional expression via emoji usage.

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1. 你什么意思?
  2. 你什么意思 😐
  3. 你什么意思 🙄
  4. 你什么意思 😏
  5. 你什么意思 😡
  6. 你什么意思 😠
  7. 你什么意思 😬
  8. 你什么意思 🗡️
  9. 你什么意思 ❤️
  10. 你什么意思 🎁

Figure 3. First scenario in Experiment 3, the texts read "What do you mean"



Figure 4. Second scenario in Experiment 3, the texts read "I know."

#### 4. Data and Discussion

Data from the above three experiments are organized in accordance with the two research questions of this paper: (1) Why do university students in China use emoji when they communicate via WeChat? (2) How is emoji used by university students in China? These are also the two major aspects of the U&G theory, the first is the psychological needs that affect individuals' reason to use certain media and second is to understand how media users' behavior is formed to gratify their needs (Rubin, 1994; Lin, 1999).

##### 4.1 Why

##### 4.1.1 Motivations/Functions of Emoji Use in WeChat

Answers to this question are generally found from Experiment 2, especially question 3 in Experiment 2: Why do you use emoji in your conversation on WeChat? Question 3 in Experiment 2 is open-ended with no prompt and is collected anonymously, thus keeping manipulation to the lowest. Also, there is no hypothesis to reasons, and we would only generate different factors in participants' emoji usage from their own answers. Identical to Harada's (2004) research who finds Japanese emoticons fun to use, express emotions and soften message tone; this research also has similar observation. The following table (Table 3) illustrates the reasons and percentage of each reason within the overall participants' answers. We have also identified the percentage of each reason within female and male participants' answers respectively. Gender difference in why individuals use emoji is not given enough attention in previous studies.

	Overall percentage	Female percentage	Male percentage
Express/Clarify Emotions	71.86%	77.14%	68.85%
Fun to Use	31.25%	40%	26.23%
Soften Tone	28.13%	40%	21.31%
Convenient/Efficient to Use	25%	20%	27.87%
Strengthen Tone/Feeling	19.79%	20%	19.67%
Avoid Embarrassment	19.79%	34.29%	11.48%
Make Conversation Lively	11.46%	17.14%	8.20%
End Conversation	6.25%	14.29%	1.64%
Resemble Reality	5.20%	8.57%	3.28%
Social Interaction*	4.92%	0%	4.92%
Habit	3.13%	2.86%	3.28%
Punctuation	1.64%	0%	1.64%

Table 3: Reasons for individuals' emoji usage in WeChat

\*Social interaction means participants use emoji as a corresponding response because their chat partners use it.

It is clear from the table that the majority (71.86%) of participants in this research uses emoji to express or clarify their emotions in WeChat messages and there is not much difference between genders. It is also the primary indication of emoji or emoticon, i.e. to show emotion with images or marks in online communication. Kaye et al. (2017: 66-67) also demonstrate that emoji users are "highly aware of how emojis can reduce discourse ambiguity" and moreover, individuals "acknowledge that they can aid expression through establishing an emotional tone that is often lost with the absence of face-to-face interaction". Besides representing emotions, Lee et al. (2016) find emoji users have other strategic or functional objectives. For example, the second and third reasons that occupy the largest ratio are that users find emoji fun to use and can soften the tone of conversation. Both factors have a larger portion of identification among female participants. Female students are more concerned with the atmosphere of conversation (factors such as "avoid embarrassment" and "make conversation lively" also enjoy a higher weight among female participants). Female participants are more likely to find emoji fun to use. Some female participants also state that emoji is cute and hope emoji usage can help chat partners find themselves (female participants) cute. It is also interesting to notice that 4.92% of male participants realized a "social interaction" function in emoji usage, which means some male participants sent emoji out because their chat partners do that. While female participants did not present any indication to the "social interaction" factor in their emoji usage.

A small portion of male participants also noticed that emoji is used as punctuation at the end of sentences or between clauses while the corresponding portion among female participants is zero.

As a result, we can assume that the primary function of emoji is to express or clarify emotions of the message or its senders. Besides, female participants are more concerned with atmosphere of conversation and are more likely to set the tone of message or even end the conversation. Emoji is used to help those needs to be more efficiently gratified.

However, we should admit that use is a broad term and bears psychological construct. "Use" refers to the "conscious intentions" preceding and directing the use or consumption of media (Swanson, 1977: 218). Scholars raise questions against the U&G theory on whether media users are fully aware of their use and "their structural requirements or needs" (Swanson, 1977: 218) of media or media content. As a result, we conducted Experiment 2 after an empirical study (Experiment 1) of their own real-situation use of emoji to allow a reflexive process. Moreover, we conducted a scenario-based experiment to understand their perception of emoji to observe how they use and perceive the content of emoji.

## 4.2 How

How is emoji used by university students in China? This is the second research question in this study. It is also the second part of the U&G theory's focus: to understand how media users' behavior/perception is formed to gratify their needs (Rubin, 1994; Lin, 1999) in emoji usage. We will analyze relevant data from the following three steps: (1) we will have a brief review of our participants' use of emoji, examining the frequency, times of repetition, location and choice of emoji sent in WeChat messages (mainly data from Experiment 1); (2) we will illustrate how participants' behavior in emoji usage realize reasons and results from Experiment 2; (3) we will identify how emoji is used or not used in made-up scenarios (data from Experiment 3) to express positive (joy) and negative (anger) emotions.

### 4.2.1 Brief Summary

After analyzing relevant data, we have the following findings:

(1) There is no significant difference between genders, majors and places of origin in the overall frequency, times of repetition, location and choice of emoji. We have collected our participants' ethnographic information such as gender, age, major, place of origin. Since the standard division of age is 1.03, we would not take age as a determinant in emoji usage. In general, female participants sent out nonverbal cues

every 35.70 words and male participants sent out nonverbal cues every 42.35 words. In terms of emoji, female participants sent out emoji every 61.63 words and the word count with male participants is 77.87 words. Female participants sent out nonverbal cues (including emoji) more frequently than male participants in their texts in WeChat but the gap was not large. There is, however, no evidence showing that the frequency of emoji sent has anything to do with our participants' major, place of origin. For times of repetition, the average number is 7.71. Generally, our participants sent out single emoji or repeat the same emoji twice or three times. 52.43% of the emoji is sent out at the end of a message while 40.65% of the emoji is sent out independently. There is no significant difference between the genders, major or place of origin and location of emoji in a message.

(2) Significant difference was found between chat partners in terms of frequency; times of repetition and choice of emoji, especially with lovers. Participants use more nonverbal cues, including emoji, when they sent out messages to their lovers. Several male participants sent out 🌹[rose] or 😘[kiss] constantly. These participants may also repeat the emoji for up to 20 times at the end of the message or independently. On the other hand, female participants would send out more nonverbal cues, including GIFs, sound messages, emoji and so on, to their lovers than male participants. The emoji these female participants sent is not refined to intimate emoji such as 🌹[rose], 😘[kiss] and ❤️[heart]. The female participants would sometimes use violent emoji such as 🛠️[hammer], 🪓[cleaver] and 😡[angry] to their lovers while male participants in our research seldom sent out such emoji to their lovers. Also, female participants are more likely to send out emoji to elderly person they are not so close for example, their teachers, leaders from their part-time job etc. They would also use smiley such as 😄[joyful], 😊[smile] and 😁[grin].

(3) 😂[Face with tears of joy] and 🙄[facepalm] were the most popular emoji chosen by participants. [Face with tears of joy] and [facepalm] occupied 32.71% and 24.13% of all emoji sent out by our participants respectively.

(4) Most participants are aware of while few are affected by the official definition/name/ID of emoji in their usage. 94.13% of participants are aware of the official name of emoji when they entered them in the input bar of their WeChat. 27.10% of our participants mentioned they had changed or did not use the emoji previously entered due to their official name.

(5) Participants agree to a great extent (4.06/5) that emoji help them express themselves in online communication while the role emoji played in their offline communication is not well recognized (2.26/5). Also, female participants agree to a greater extent (4.33/5) that emoji help them express themselves in online communication than male participants (3.65/5).

(6) Compared with other forms of communication, WeChat ranked 2<sup>nd</sup> next to face to face communication. Also, more male participants rank face-to-face communication

top in terms of frequency of usage, while more female participants rank WeChat top. For those that do not neither rank face-to-face communication nor WeChat top, they would consider QQ (another instant messaging application) to be the most frequently used form of communication.

#### *4.2.2 Behavior and Motivation*

Based on and developed from the U&G theory (Stafford et al., 2004), we can conclude from Table 3 that factors influencing our participants' emoji usage is categorized into the following three types. Also, we will combine with our empirical data from Experiment 1 to argue whether users' behavior reflect or shape their motivation of emoji usage.

##### (1) Content gratifications

According to Stafford et al. (2004), content gratifications indicate the gratifications brought by the content of medium such as the pattern of emoji in this case. 31.25% (second largest portion among all motivations) of our participants find emoji fun to use and 25% of participants find emoji convenient/Efficient to use. The former motivation means our participants are attracted by the pattern of emoji and the latter motivation shows our participants find the content of emoji simple and effective in their online communication. Moreover, we observe that 5.20% of our participants use emoji to resemble reality, a gratification or motivation produced by the content of emoji. Most emoji represent the face of human beings. The gratification is generated from the content of emoji as a kind of entertainment or informative tool. Also, we observe from Experiment 1 that newly added emoji such as 🥳 [Face with tears of joy] and [facepalm] are the most popular emoji in used in WeChat. They are both relatively new emoji compared to [grin] and [grimace], which have similar meaning to 🥳 [Face with tears of joy] and [facepalm]. Also, newly added emoji are used more often such as [smart], [concerned], [hey] and etc.

##### (2) Process gratifications

This type of gratification refers to the contentment met by users when they are experiencing media usage, such as the process of using emoji in this case. Process gratifications of emoji usage also direct to functional aspects of emoji in online communication. Functions of emoji in WeChat can be categorized into this type such as "express/clarify emotions" (71.86%), "soften tone of message" (28.13%), "strengthen tone/feeling" (19.79%), "make conversation lively" (11.46%), "habit" (3.13%) and "punctuation" (1.64%). A functional analysis, according to Anderson and Meyer (1975: 11), should "provide a description of behavior" and "describe all elements the behavior

materially affects and that, in turn, effect it; that is, the system or context of that behavior". We have a brief description on the behavior of emoji usage by our participants in terms of frequency, times of repetition and location. We found that female participants sent out nonverbal cues every 35.70 words and male participants sent out nonverbal cues every 42.35 words. In terms of emoji, female participants sent out emoji every 61.63 words and the word count with male participants is 77.87 words. Normally, our participants sent out emoji by itself or repeat the same emoji twice or three times, but when they were messaging their lovers, especially male participants, they could repeat intimate emoji such as [kiss] or [hug] for up to 20 times. Moreover, emoji is often sent out at the end of a message or independently. When the emoji is sent out at the end of a message, it can function as punctuation. However, the motivation of "punctuation" is not well recognized by our participants (1.64%). Emoji also function as a way of self-presentation or to seek self-status, which is also "one of the major uses and gratification factors" (Al-Jabri et al., 2015: 666; Park et al., 2009). Self-presentation indicates "how people attempt to present themselves to control or shape" how others see them, involving "expressing oneself and behaving in ways that create a desired impression" (Terry et al., 2007, p. 836). Most of our participants find the motivation "express/clarify emotions" (71.86%) the most important factor in their emoji usage. Expressing or clarifying users' emotions is a way to present oneself and satisfy their psychological needs. Moreover, our participants largely agree (4.06/5) that emoji help them express themselves in online communication, the mark is higher (4.33/5) with female participants. Messages formed by words are not enough to complete the self-presentation process and would be regarded as flat and unlively. With the use of emoji, users are better at presenting themselves or showing a more integrate picture of themselves by combining their flat words with non-verbal cues such as emoji. Also, emoji has linguistic function. It can be used to soften or strengthen the tone of message sent by users. This function is also a part of self-presentation process since individuals strive to present certain image of themselves through the medium of emoji. If users want to be nice, polite and cute, they send emoji to meet the needs; moreover, if users are not satisfied by verbal cues and want to present a strengthened image of themselves, they would also use emoji to gratify their needs.

### (3) Social gratifications

Social gratifications are the satisfactions provided by interpersonal communication and social networking using media or emoji as the case in point. For example, the motivation of "end conversation" (6.25%) and "social interaction" (4.92%) can be categorized into this type. Emoji can be used as a polite way to end the conversation or show no interest in the topic. Silence in interpersonal communication is regarded to be rude and awkward whereas emoji can perform this social role and

generate social gratification by ending the conversation politely. To perform a social role, emoji is also used to remain socially interacted. If the chat partner sends out emoji, some of our participants would send back messages with emoji. Social gratification is met by presenting a polite social image in online communication.

#### *4.2.3 Emoji and Emotion*

Empirical data from experiment 1 is illustrative in understanding the behavior with emoji usage. However, due to privacy concern, textual content of message is not recorded. Instead, only the number of verbal cues between nonverbal cues is counted. As a result, we design Experiment 3 to compensate the loss of verbal information and understand our participants' perception of emoji in two made-up scenarios. Since Experiment 3 serves as a further illustration to our research questions, we only examine two typical and extreme emotions, positive (joy) and negative (anger). We present our participants 10 messages with or without emoji in each scenario and ask our participants to sort the order of the messages by level of emotion. We also ask them to provide their own version of message with or without emoji. "Human perception is not a passive registering process but an active organizing and structuring process" (Carey & Kreiling, 1974: 227) and is also the "key element in the uses and gratifications position" (Swanson, 1977: 219). How users perceive emoji and how they connect emoji to emotions will ultimately affect their emoji usage.

The first made-up scenario contains a message which reads: "What do you mean" 你什么意思 and is designed to present negative emotion, anger. 78.26% of our participants find the message with the emoji [tongue] least angry while 52.17% of our participants find message with no emoji but a question marks most angry and 39.13% of our participants find message with the emoji [smile] most angry. More female participants (64.29%) find message with no emoji most angry than male participants (33.33%). While more male participants (66.67%) find message with the emoji [smile] most angry than female participants (21.43%). Also, most of our participants would have the following three ways to show they are genuinely angry: be silent, send out message with punctuation mark and send out message with the emoji [smile]. It is surprising to find no angry emoji, such as [angry] and [scold] or violent emoji such as [cleaver] and [hammer], is used to present real anger. And there is a vast gap between genders in emoji perception with the emotion of anger.

The second made-up scenario involves a message which reads: "I know" 我知道了 and is designed to present positive emotion, joy. 60.87% of our participants find the message with emoji [kiss] most joyful and 43.48% of participants find the message with no emoji but a period least joyful and 30.43% of participants find the message with emoji [smile] least joyful. There is no significant difference in perception

of emoji with joyful emotion. And our participants would normally use the following four ways to present real joy: use an auxiliary word such as “la” 啦 instead of “le” 了, use exclamation mark, use GIFs and repeat joyful emoji such as [grin] more than once.

Emoji motives individuals to use it because it can express emotion. But sometimes emoji softens the tone of message too much to allow users to express real anger. Moreover, due to the fact emoji is widely used and distinctly perceived; users would repeat an identical emoji to present his/her genuine emotion or feeling.

## **5. Conclusion**

This study investigates why and how university students in China use emoji in WeChat through the lens of uses and gratifications theory. Several key findings are observed in this study. First, we argue the appropriateness of the U&G theory in the study of emoji. Emoji has become a new medium to communicate and express emotions in computer-mediated communication (CMC). Although previous research seldom applies the U&G theory in their study of emoji, they follow the approach of the U&G theory to understand users' motivation and differences in usage with emoji. Second, we conducted empirical study on the real-life experience of university students' emoji usage in WeChat to compensate the U&G theory's limitation. Users in the U&G theory are not ideal and may not identify their motivations of media usage and would sometimes be affected by researchers' hypothesis. We, however, rely heavily on our empirical data and make description of users' behavior based on their actual use of emoji. We find that there is no significant difference in gender, major or place of origin in terms of the frequency, times of repetition, content and location of emoji. However, chat partners will affect, to some extent, the content and times of repetition of emoji, especially with lovers. Thirdly, we combine our empirical data with motivations of emoji usage identified by our participants to see how their behavior shapes their motivation of media use. We observe three types of gratifications in media use (content gratifications, process gratifications and social gratifications) and provide our augment with both empirical and qualitative data. We find the functional factor in process gratification allow for more self-presentation in emotion and accounts for the major motivation in emoji usage. Last but not least, we examine the perception of emoji and the relation of emoji with emotion. We rely on two made-up scenarios to interrogate two typical and extreme emotions, negative (anger) and positive (joy). Gender is a major determinant in perceiving negative emotions with emoji whereas a minor one in perceiving positive emotions presented by emoji. Emoji [smile] is the most divergent emoji with its official name because it is often used to present negative emotion such as anger. Also, to deliver real emotion, anger and joyful in this case, users would reply more on punctuation, auxiliary words or times of repetition of an identical emoji.

**Authors Bios:** Mengyu Luo, [m.luo@usst.edu.cn](mailto:m.luo@usst.edu.cn), Female, Associate Professor at University of Shanghai for Science and Technology, Research Interests—Cultural Sociology and New Media; Shiyun Zhu, [zhuzhu73668@163.com](mailto:zhuzhu73668@163.com), Female, Post-graduate student at University of Shanghai for Science and Technology, Research Interests—New Media and Communication.

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