Emoji Sequence Use in Enacting Personal Identity

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ABSTRACT

Focusing on a Chinese social media platform, this study adopts computer-mediated discourse analysis to examine how users employ emoji sequences to construct their personal identity through the expression of stance and engagement. Seven types of linguistic elements were identified by conducting stance and engagement analysis on emoji sequences in posts by social media influencers. Stance was more frequent than engagement. Attitude markers were the most common element used to convey stance, whereas directive was the most prevalent element used to express engagement. In addition, emoji sequences that did not convey stance and engagement were coded as n/a. This study also observed creative usages in the composition of emoji sequences that compensate for the lack of a prescribed emoji sequence grammar. Based on these findings, it advances recommendations for the design of emoji and of social media platforms grounded in linguistic principles.

CCS CONCEPTS

CCS → Applied computing → Law, social and behavioral sciences → Anthropology

KEYWORDS

Emoji sequences, Language, Identity, Self-presentation, Stance and engagement

1 Introduction

The common occurrence of emoji sequences in computer-mediated communication (CMC), defined as "two or more emoji with different meanings that stand together to form a conceptual unit" [12, p.1], has led to the popular speculation that emoji are evolving into a new and digitally-mediated language [8, 12]. Indeed, these colorful, cute and playful pictographs go beyond merely expressing emotions and embellishing messages; rather, a sequence of emoji can function as a sentence-like textual utterance (though it may not convey a complex idea or concept), offering social media users a new way of meaning-making, expression and self-presentation [8, 15, 26]. Well-known instances described in the popular press include Roger Federer using an emoji-only tweet to describe his day off and Andy Murray employing a string of emoji to announce his wedding [13]. Previous CMC research on self-presentation and identity construction also provide some examples that illustrate emoji sequence usages [26], according to the above-mentioned definition.

The emergent practices of selecting and grouping emoji together for self-narrative raise challenges for theoretical and practical understanding of emoji use in CMC. Emoji are created primarily by professionals, and their adoption is determined by different social media platforms. Thus, the design of emoji and of social media platforms need to be grounded in an understanding of the innovative and complex ways users employ emoji to engage in social interactions. Moreover, people construct and negotiate their identity each time when they communicate using a new language [17]. If emoji are to develop as an independent graphical language, users need to have emoji not only expressing emotions but also constantly organizing and re-organizing who they are and how they relate to the digital world. Existing emoji literature only mentions the role of single emoji in the establishment of user identity [7, 24, 36, 46, 50]. Further, the few previous studies that pertain to emoji sequences mainly focus on their pragmatic and communicative functions [12]; their social use, such as when employed to enact personal identity, remains largely unexplored.

Based on the premise that emoji sequences are functionally analogous to sequences of words in verbal language, this study explores how social media users employ such sequences to enact their personal identity

by using computer-mediated discourse analysis [14], an approach that adapts methods from linguistics and related fields to analyze digital discourse. Specifically, it employs stance and engagement analysis to investigate how users select and use emoji as linguistic elements to express their 'textual voice' and community recognized personality and also to encourage their audiences for being discourse participants [20]. Sina Weibo, China's indigenous microblogging site, lends itself well to emoji sequence analysis. Emoji use – including the formulation of emoji sequences – is common on Weibo due to the platform's emoji affordances and developed emoji culture [11, 12]. In short, by focusing on China, whose culture fosters an especially high concentration of emoji use [11], this study advances current CMC and emoji literatures, while also providing new insights which can inform the future design of emoji and social media platforms.

In what follows, this paper first develops this theme in relation to personal identity, self-presentation on social media, and emoji sequence literatures, after which it provides background information on stance and engagement analysis. It then describes its dataset, which consists of Sina Weibo posts published by Chinese celebrities, and also the analytical procedures followed. Overall, this study found that 95% of the emoji sequences were analyzable as conveying linguistic elements required for the expression of stance and engagement, supporting the premise that these textual utterances can be used for enabling one's personal identity. Further, stance was found to be more prevalent than engagement. 'Attitude markers' (i.e. indicating a message author's affective attitude to propositions) is the most common linguistic element for expressing stance, and 'directive' (i.e. asking readers to perform an action or show their agreement) is the most common element for conveying engagement. This study also observed creative use of emoji repetition to compensate for the lack of emoji which can function as adverbs, thereby making certain sequences more 'language-like.' Based on these findings, this study advances recommendations for emoji design and social media platforms grounded in linguistic principles.

2 Background

2.1 Operating the concept of self-identity

The common consensus is that "language use is a form of self-presentation" – people not only convey and exchange information with their interlocutors but attach their own identity as well as their relation to the social world to "particular written and spoken texts" [28, p.293]. The term 'personal identity' refers to a set of individuals' attributes, beliefs, and desires which allow them to distinguish themselves in socially relevant ways [10]. People attempt to assert their individuality but also try to connect with others to meet their desire for recognition, affiliation, and a sense of belonging [30]. In seeking to portray their identity, such individuals implement 'identity-work' through their choices about how to verbally communicate [49]. Through considering emoji as 'words', this study examines personal identity from the perspective of how social media users employ emoji sequences as a way of self-presentation.

2.2 Self-presentation on social media

Drawing on the social dimension of social media, the concept of self-presentation states that individuals engage in a process of impression management and information control while interacting with both actual and imagined audiences in networked digital space [24]. Specifically, people use social media-afforded multimodal communication (such as text, images and website links) to convey their opinions, emotional states and intentions [3] and to construct the discourse context in which their identity can be interpreted and understood by others at the same time [34, 47].

While some scholars have focused on textual self-prestation [e.g., 4, 9, 17, 48], others have studied visual impression management through examining profile photos and selfies [e.g., 5, 23, 37, 41, 43]. For instance, [9] investigated how online dating participants use well-crafted textual messages to present an ideal self. In examining profile statuses of WhatsApp Messenger, [17] found that users employ a variety of linguistic elements (e.g. 'self-mention' 'directives') to not only express their stance but acknowledge their audiences

as discourse participants. In contrast, [41] compared online visual self-presentation from a gender perspective, revealing that girls tend to focus on both the aesthetic, emotional and symbolic aspects of photographs more than their male counterparts. Similarly, [23] also identified such gender differences with regard to gaze, posture, dress, and distance from the camera, and concluded that the teens construe their profile images as invitations to interact with others online. Moreover, some of the previous studies focused on a combination of visual and textual self-presentation [e.g. 16, 40, 42]. The preceding review suggests the CMC literature primarily focuses on the topic of enacting personal identity through text and photographs. The emergent digitally-mediated graphical language, that is emoji, remains unheeded.

2.3 Emoji sequences

Previous studies primarily focus on the pragmatic and communicative functions of emoji sequences. This line of research sheds light on users' tendency to group different emoji together to convey complete messages [8, 15, 12]. [15] identified 'narrative sequence' (i.e. the use of a series of consecutive emoji to tell a story) as one of the pragmatic functions of emoji. 'Narrative sequence' aligns with 'emoji phrase' or the use of a string of emoji in the expression of propositions [8] Moreover, [12] showed that emoji sequences communicate a variety of speech acts (such as making a claim and expressing desire), and exhibit different rhetorical relations with the accompanying texts (such as restatement and elaboration).

There are a few studies that, while not focusing directly on emoji sequences, do include examples that illustrate how users employ sequences to make meaning and also verbally interact with others in CMC. In one study of the pragmatic intentions underlying emoji use [6], several users reported that using instances of emoji sequences provides speech context in which their messages can be correctly interpreted and understood by their peers. [11] examined emoji use for persuasion, and observed that users sometimes employ two or more different emoji to express emotions (i.e. pathos), to provide detailed information (i.e. logos), and to create similarity with message readers (i.e. ethos). Instances derived from research on emoji hashtags showed that Twitter and Instagram users tag a cluster of emoji to convey a message subject [18] and to express emotional statement [32].

By considering emoji as 'words', a number of studies observed grammatical (or at least grammar-like) properties within emoji sequences [29, 35, 39, 12]. In exploring the translation of text to 'emoji sentences', [29, 35] found that emoji that represent facial expressions and actions/activities often function as verbs while emoji that denotate objects function as nouns. These findings partially align with [12]: The authors observed that, in order to employ emoji sequences to convey speech acts, Weibo users not only use emoji that represent facial expressions and body gestures as explicit verbs but also emoji that denotate objects as implicit verbs; users also tend to use animal emoji that indicate certain personalities and attitudes as well as gender symbols as pronouns. In contrast, [38] and [39] noticed that YouTube and WhatsApp users often string two or more identical emoji together as an 'intensifier' to modify their assertions, which is similar to how an adverb functions. Relatedly, [27] have argued that repeated emoji are similar to 'beat gestures' in speech. Other scholars have commented on the syntactic relations within sequences, to some extent. For instance, [8, 45] showed that emoji sequences exhibit subject- or stance-first word order. (This is also normal word order in Chinese.) [8] also revealed an iconic conceptual structure in some strings of emoji, as well as the practice of calquing, whereby emoji are directly mapped onto morphemes, words, or utterances of verbal language. Conversely, [12, 44] observed that Weibo and Google Hangout users tend to place stance-indicating emoji after emoji that represent actions, activities and objects (similar to verb-subject and object-verb word order).

In sharp contrast, among previous studies only a few but merely acknowledge the role of single emoji in the construction of personal identity [7, 15, 34, 36, 46]. For instance, [46] reported that, among Japanese users, using emoji in an aesthetic manner is an important aspect of expressing and managing one's online self-image. [36] noted the practice of Twitter users using various emoji skin tones to present their ethnicity. In

examining emotional self-presentation on WhatsApp, [26] included some examples that illustrate how users sometimes employ a cluster of emotion-laden emoji to express their attitudes, opinions and feelings.

3 Methodology

A review of the literature shows that language use on social media is a form of self-presentation; emoji sequences can substitute for sequences of words and are functionally analogous to verbal language. Thus, a working premise of this study is that emoji sequences potentially express verbal meaning (although it may not always be straightforward to translate them into words), constitute language properties, and allow for self-presentation. To explore this premise systematically, this study employs a language-focused approach – stance and engagement analysis [20] – to address the following research question:

RQ: Which linguistic elements are formulated in emoji sequences by users to enact their personal identity?

3.1 Stance and engagement

The literature on emoji sequences suggests that they function as textual utterances in CMC [8, 15, 12]. These, in turn, allow users to construct their personal identity through the expression of stance and engagement [20]. Stance is considered as attitudinal dimension: it constitutes the ways writers express a textual 'voice' or community recognized personality, and convey their judgments, opinions, and commitments. Specifically, linguistic elements used to communicate stance include: 'hedges' (e.g. possible, might), 'boosters' (e.g. highly, very), 'attitude markers' and 'self-mention' (e.g. I, our). Furthermore, engagement is seen as an alignment dimension: it encompasses the ways writers acknowledge the presence of their audiences and encourage them for discourse participation. Linguistic elements used to convey engagement include: 'reader mention'(e.g. you, your), 'directives' (e.g. come, go) 'questions', 'appeals to shared knowledge' (e.g. of course, be well recognized) , and 'personal asides' (e.g. as mentioned).

Noteworthy is that the primary focus of stance and engagement analysis has been on written discourse, especially academic writing [e.g., 21], but it has also been applied to spoken and multimedia discourse [e.g., 17, 22]. For instance, it has been adopted by [17] to analyze how WhatsApp users employ their profile statuses to reveal their personal identity. The advantages of using stance and engagement analysis are that they are well-defined and have been tested extensively for textual materials [21]; this is the first study to apply this approach to an analysis of emoji.

3.2 Data

The data comprise two types of Sina Weibo posts: 1) combinations of emoji sequences and text; 2) independent emoji sequences. All of these are operationalized as instances of two or more semantically different emoji grouped together with no intervening text or punctuation. Because emoji sequence use in enacting personal identity is a new line of inquiry, this study sought information-rich samples that captured the phenomena of greatest interest [1]. This led this study to sample emoji sequences as used by social media influencers (celebrities or entertainment professionals, including actors/actresses, singers, and TV show hosts). It is well recognized that such figures are adept at using emoji sequences (as defined by this study) to convey playful and persuasive messages [11, 12]. The sampled influencers thus are particularly important for informing and advancing the understanding of emoji sequence use.

This study used the 'Sina Weibo Influencer Popularity List' (http://data.weibo.com/top/hot/famous), selecting 87 accounts owned by 87 celebrities, based on the criterion that the most recent 10 posts had at least one post containing an emoji sequence. It then manually collected 403 Weibo posts that contain emoji sequences posted between April 11 and April 28, 2017 and between November 11 and November 28, 2018. This size is considered effective for a manual coding study [25].

3.3 Analysis method

This study adopted computer-mediated discourse analysis, at the level of text analysis, [14], to analyze and identity the linguistic elements involved in the expression of stance and engagement. To this end, it was first necessary to translate them approximately into Chinese words. This study conducted three-step emoji sequence translation in an attempt to overcome its subjective tendency. First, the author, a native Chinese speaker and an emoji researcher, translated and coded the entire data set. The author also coded a large amount of the data together with: 1) an English-speaking emoji researcher who understands the linguistic structure of Chinese; and 2) a Chinese scholar whose expertise is on cultural communication. The emoji definitions provided by Weibo helped during this process. At the end of the first step 79 ambiguous sequences remained. This study then conducted a second step by recruiting nine crowdsourced coders on Witmart (http://www.witmart.com/cn/, a Chinese crowdsourcing platform that is equivalent to Amazon's Mechanical Turk) to provide interpretations of the ambiguous sequences. For the remaining 20 cases of unclear examples, in a third step the author consulted three emoji consultants recommended by a Chinese graphicon design firm. All 20 ambiguous cases were solved.

All of the emoji sequences in the Weibo data were coded in the discourse context rather than in isolation. Specifically, the repetitive use of identical emoji for intensification is functionally equivalent to the use of adverbs [38, 39], and was coded as 'boosters'. Emoji that convey sentiments and opinions (e.g. hearts, facial expressions, body gestures) were coded as 'attitude markers'. This study coded 'self-mention' and 'reader mention' by identifying emoji that function as first- and second person pronouns, depending on specific context. For example, animal emoji often function as 'I' and 'you'; gender symbols represent 'I'; emoji that denotate 'onlookers' serve as 'we' and 'you'. Moreover, emoji that show 'a winking face' and 'a winking face showing a stuck-out tongue' allow for the conveying of shared secrets [8], and were coded as 'appeals to shared knowledge'.

Emoji functioning as deictic and imperative verb were coded as 'directives', such as 🫳 (meaning 'come') and 🫂 (defined by Weibo as 'follow each other'). Emoji that denotate question mark and represent puzzled facial expressions and body gestures were coded as 'questions'. Those examples which could not be coded by applying stance and engagement analysis were coded as 'n/a', including sequences comprising a list of emoji functioning as nouns. The results of the coding are provided in the next section.

4 Findings

The mean number of emoji used across all sequences is 5 with a mode of 4. The Standard Deviation (SD) is 3.52. The scope of emoji represented in the data includes not only all the categories in the Emoji Unicode 12.0 list (e.g. smileys and people, animals and nature, objects, activities, food and drink, travel and places, symbols, flags) but also specific Sina Weibo-afforded ones such as animated emoji and emoji including text overlays. In what follows, the frequency distribution results of the stance and engagement analysis are presented first, followed by examples illustrating each category.

4.1 Stance and engagement

Analysis of the Weibo data shows in order to enact personal identity, the users prefer to use emoji sequences for the expression of stance more than of engagement. As Table 1 presents, 'attitude markers' accounts for the largest overall percentage, followed by 'self-mention' and 'boosters'. In their attempts to comment on specific people and/or issues mentioned in the sequences or text, the social media influencers in the dataset often used sentiment-laden emoji (e.g. emoji that represent heart(s), facial expressions and body gestures) to convey their judgments, opinions and emotions. Emoji that convey 'attitude markers' include emoji that function as verbs (example 1, 3) and as adjectives (example 4) in the discourse context. Specifically, emoji that function as adjective comprise two general categories: the first can be directly translated into adjectives based on the definition offered by Weibo (e.g. 😊, defined as 'lovely'); the second is derived from applying

the rebus principle. For example, 💪 which means '威武' (or 'great/awesome') comprises the letter 'V' and a Arabic number '5'. The pronunciation of 'V' in English and of '威' in Chinese is identical; the pronunciation of '5' and '武' in Chinese is also identical. That is, a combination of 'V' [wēi] and '5' [wǔ] means '威武' [wēi] [wǔ].

Table 1: Stance and engagement: Linguistic elements and frequency distribution

	Frequency	Total	Percentage
Stance			
Attitude markers	255	403	63.3%
Self-mention	123	403	30.5%
Boosters	121	403	30%
Engagement			
Directives	70	403	17.4%
Reader mention	37	403	9.2%
Questions	24	403	6%
Appeals to shared knowledge	11	403	2.7%
n/a	20	403	5%

The sample users sometimes employed emoji that function as first-person pronoun to communicate 'self-mention' in specific speech contexts. Specifically, to refer to themself ('I'), they tended to deploy gender symbols and those animal emoji that have certain personalities and express certain attitudes (example 2); some of the sample users (i.e. actor/actress) occasionally used their movie or TV names (example 1). The emoji that denotate multiple people (e.g. 'onlookers') were used as 'we' (example 4). while the 'booster' element was conveyed through emoji repetition. Weibo users in the dataset often grouped two or more emoji that have either identical appearance or similar semantic meaning to modify or intensify their assertions.

The engagement analysis revealed that 'directives' is the most prominent linguistic element used by the Weibo users in the data, followed by 'reader mention', 'questions', and 'appeals to shared knowledge'. All of the users preferred to employ emoji that function as deictic and imperative verbs to ask their message readers to do something, such as attend a concert (example 6) and follow one's Weibo updates (example 7). Similarly to 'self- mention', the animal emoji and emoji that denotate multiple people were used as second-person pronoun to refer to the message reader (s) ('you') (example 5). The use of 'question' for the expression of engagement is primarily conveyed through emoji that function as interrogative words (i.e., 'what' 'why'), including explicit and implicate ones (example 5). It was relatively infrequent in Weibo posts. Conversely, 'appeals to shared knowledge' is little-utilized linguistic element. The users in the dataset rarely used emoji that denotate 'a winking face' and 'a winking face showing a stuck-out tongue' as explicit markers when asking message readers to recognize something as familiar or accepted (that is, to convey something like 'you know I am kidding' or 'you know I mean') (example 7). Emoji sequences in the 'n/a' category are compositions of emoji that function as noun and therefore do not convey stance and engagement, as illustrated in examples. These examples are discussed in the following section.

4.2 Examples of emoji sequences

An emoji sequence may express engagement and/or stance (if the sequence includes the linguistic elements such as ‘self-mention’ and ‘question’). The following examples illustrate the identified linguistic elements employed by the Weibo users to enact their personal identity in the specific discourse context.

Example 1. An emoji sequence illustrating the expression of stance through use of an ‘attitude marker’ and ‘self-mention’.

终于尝到了传说中珍珠奶茶 

A free English translation of the Chinese text in example 1 is: ‘(I) finally tried the popular Bubble tea.’ The first emoji in the sequence represents ‘Bubble tea’. The second emoji (defined by Weibo as ‘disappointment’) indicates the message author’s attitude towards this ‘Bubble tea’ and therefore serves as an ‘attitude marker’. The last animal emoji (‘fox’) is well recognized as the name the user’s name in a TV show, and thus functions as first person pronoun (‘I’) and serves as ‘self-mention’. The overall meaning is something like ‘Bubble tea, disappointment, I (say).’

Example 2. An emoji sequence illustrating the expression of stance through use of ‘self-mention’.

 @ user

A brief background for example 2: The user posted this independent emoji sequence along with an image (a birthday gift given by his friend) below the sequence. The first emoji (i.e. making a bow with hands folded in front) means ‘thanks’; the last emoji indicates the user himself or ‘I’ [11] thus serves as ‘self mention’. The overall meaning is ‘thanks, I’.

Example 3. An emoji sequence illustrating the expression of stance through use of ‘attitude marker’ ‘booster’, and ‘self-mention’.

冬天来了，春天不在遥远了

A free translation of the text in example 3 is: ‘Winter has arrived. Spring is not far away’. The first emoji means ‘cheer on’ and shows the message author’s commitment, thus serving as an ‘attitude marker’. The following two emoji were used to emphasize his commitment and therefore function as ‘booster’. The last emoji (female gender sign) indicates the message author himself (‘I’) and therefore serves as ‘self-mention’.

Example 4. An emoji sequence illustrating the expression of stance through use of ‘attitude marker’, ‘booster’ and ‘self-mention’.

偶和偶的小伙伴们一致认为这才是真正的芭蕾 

A loose translation of the text in example 2 is: ‘I and my friends think this is real ballet.’ The first two emoji denotate ‘man and women dancing’ mean ‘ballet’. The third emoji 💯 (meaning ‘good’) indicates the message author’s opinion and therefore conveys ‘attitude marker’; the following two emoji 💯💯 are used for intensification (i.e. ‘really’) [38, 39] and thus serve as ‘booster’. The last emoji (defined by Weibo as onlookers) means ‘we’ in this speech context and therefore functions as ‘self-mention’. The overall meaning of the sequence is ‘ballet, really good, we (think).’

Example 5. An emoji sequence illustrating the expression of engagement through use of ‘reader mention’ and ‘question’.

圣诞节  大家都想要些什么礼物呢  

The Chinese text in example 3 means, ‘What Christmas gifts do you want to have?’ The first three emoji in the sequence represent ‘gifts’. The second (defined by Weibo as ‘question’) means ‘what’ and thus functions as ‘question’; the last two emoji (defined by Weibo as onlookers) refer to the message readers (‘you’) and thus convey ‘reader mention’. The overall meaning is ‘What gifts (do) you (want)?’

Example 6. An emoji sequence illustrating the expression of engagement through use of ‘directive’.

A brief background of example 4: The singer posted this independent emoji sequence along with an image (a poster advertising his concert) below the sequence. The first emoji (defined by Weibo as ‘come’) was used by the singer to request that message readers come to the concert and therefore serves as ‘directive’. The last three emoji that denotate music notes and microphone are positioned together to represent a conceptual idea, that is, ‘music/concert’. The overall meaning is something like ‘Come to (my) concert’.

Example 7. An emoji sequence illustrating the expression of engagement through use of ‘directive’ and ‘shared knowledge’.

关注我的动态了吗  

A free translation of the text in example 5 is: ‘Have you paid attention to my news?’ The background is that this celebrity had announced her pregnancy on Weibo, generating a huge amount of comments and reposts. The overlay text in the first emoji (meaning ‘follow each other’) functions as ‘imperative verb’ and thus serves as ‘directive’. This celebrity used the second emoji (defined by Weibo as winking) to indicate the well-recognized news about her pregnancy, thereby expressing ‘shared knowledge’.
Example 8. An emoji sequence coded as ‘n/a’.

购物车还是没装满 

A loose translation of the text in example 6 is: ‘My shopping cart is still not full’. The emoji sequence merely consists of 6 food-related emoji that function as nouns.

5 Discussion and conclusion

5.1 Research question revisited

The results of the research question – which linguistic elements are formulated in emoji sequences by users to enact their personal identity – support the assumption of this study that emoji sequences provide individuals with a new way of self-presentation in the social media space. These findings differ from how textual and visual self-presentation is discussed in the current CMC literature, to some extent. [17] found that to enact personal identity through text-based profile statuses, WhatsApp users prefer to convey engagement more than stance. This result aligns with [23]: Teens construe their visual selves as invitations to interact with others on social media. This study, however, provides different observations. Its overall finding suggests that Weibo users prefer to present themselves through expressing their own ‘voice’ or community recognized personality (that is, stance) more so than through acknowledging the presence of their audiences and

encouraging them for discourse participation (that is, engagement). This preference of expressing stance is consistent with previous studies which found that the most prevalent speech act conveyed through emoji sequences is making a statement (either subjective or objective) [11, 12]. Furthermore, this study found that, depending on the situational context, the users studied used certain emoji to convey a variety of stance-related and engagement-related linguistic elements (e.g. 'self-mention', 'reader mention'). These findings support the observations that emoji sequences can function as parts of speech and convey a complete message (though it might not be a complex one) [29, 35, 39, 12].

It is unsurprising that the most frequently employed linguistic element identified by this study is attitude markers or the expression of feelings and opinions. This result is consistent with the findings of many previous studies that emotional expression is one of the main aspects of self-presentation on social media [26] and that emoji are semantically rich and emotionally expressive [8], and thus can serve this purpose [26]. Moreover, the use of emoji repetition to convey 'boosters' (that is, emphasizing shared information and marking involvement with the topic) aligns with the statement that repeated emoji are similar to 'beat gestures' in speech [27], and pragmatically function as 'intensifier' to stress and amplify users' utterances [38, 39].

The identification of 'self-mention' (the explicit signal (s) of an author's presence in a message) as well as 'reader mention' (a linguistic marker for acknowledging and bringing message readers to the discourse) is perhaps more surprising. These findings go beyond the common consensus that emoji primarily serve as nonverbal cues in CMC and are used to compensate for the absence of facial expressions and body gestures found in face-to-face conversations [2, 34, 31]. Obviously, the use of emoji that function as 'pronouns' in speech context underlines that users (at least in the Weibo data) are developing their own practices to expand emoji use. The above examples of 'self-mention' (example 1 and 2) depict the users' orientation and worldview of life emanating from their personal encounters and experiences which, altogether, gives a glimpse of their identity [20].

This study found that the most used linguistic element for the expression of engagement is 'directives' (i.e. instructing message readers to either perform an action or accept propositions determined by the writer). This finding aligns with one of the communicative functions of emoji sequences identified by [12], that is, the act of 'manipulate'. The reason might be that these colorful, cute and playful symbols can serve as tone softeners [8], and facilitate message writers' attempts to make a request in a pleasant manner. Surprisingly, only 5% of the sequences did not lend themselves to interpretation as stance and engagement, indicating that the vast majority of the emoji sequences in the Weibo data function pragmatically like textual utterances. Moreover, this study found 7 out of 9 linguistic elements involved in engagement and stance, suggesting that the range of emoji sequences that enact personal identity is limited compared to text. Last but not least, while [9] found that users tend to employ well-crafted textual messages to present an ideal self in CMC (such as avoiding grammatical errors and misspellings), the identified n/a category and the ambiguous sequences that this study encountered during the emoji translation process suggest that emoji sequence formulation is loose and fluid [12].

5.2 Theoretical contributions

First, the study broadens general CMC literature, and specifically emoji-focused literature, by systematically examining and identifying the ways that users employ emoji sequences as textual utterances to construct their personal identity on Weibo. As the literature review shows, previous CMC research has primarily focused on self-presentation through text and/or photographs; the literature on emoji sequences mainly looked at their pragmatic and communicative functions while their social uses remained unexplored. Second, this study contributes to stance and engagement analysis by applying and adapting it to the social media context. Third, it advances the concept of personal identity by adding emoji as a new and digitally-mediated graphical language. Fourth, the results can inform future research aimed at better understanding the emergent user

practice of emoji use in CMC. Finally, the methodological approach employed here is transferable, meaning this paper's research method can be applied to the study of emoji sequence use in other contexts.

5.3 Practical implications

The findings of this study have a number of implications for emoji design and social media platforms. First, the innovative and complex ways that users employ emoji to express engagement and stance suggest that they strive towards making emoji a useful and effective form of language in CMC. At the same time, such user practices also indicate some constraints on using emoji to facilitate digital communication, and therefore inform emoji designers of what is currently lacking in users' emoji repertoire. For instance, emoji repetition that functions as adverbs ('boosters') and animal emoji that function as pronouns ('self- mention', 'reader mention') suggest that emoji design should consider not only the emotional and playful aspects of emoji, but also their linguistic aspects that can function as parts of speech. Second, the observations on non-linear emoji word orders (examples in section 4.2) illuminate the phenomenon whereby users are developing their preferred word orders, rather than following top-down grammatical rules. Designers of emoji and of social media platforms should consider such emergent user practices to be an important factor when creating emoji and improving platform functionalities. 95% of the emoji sequences in the Weibo data were analyzable, suggesting that enacting personal identity through emoji sequences has become an emergent phenomenon (at least in the Weibo data). In light of this, the third recommendation is to provide preformulated emoji sequence options in the form of automatically generated profile statuses. This would be appreciated by users as an alternative to having to search through emoji menus to construct the desired sequences. The last recommendation derives from the observations of this study as well as claims in the literature. According to [19], emoji that render differently across devices and platforms prevent users from using them, due to the concern of causing misunderstanding. Indeed, one of the interpretive difficulties this study encountered is inconsistencies in the ways emoji are rendered. One solution is to provide definitions. In the data analysis this study found that emoji sequences made up of emoji for which definitions were available on Weibo expressed clearer meanings than emoji without definitions.

5.4 Limitations and future research

As the first attempt at systematically examining emoji sequence use in enabling personal identity, this research of course has its limitations and also suggests fruitful directions for future work. First, the data were primarily coded by the author. While engaging in discussions with a linguistic expert and confirming interpretations with the crowdsourced coders and three emoji consultants added reliability, it was not feasible to conduct interrater reliability measurements. Second, this research analyzed sequences of emoji used by celebrities on Sina Weibo, which may limit the generalizability of its findings, e.g., the celebrities may be more creative emoji sequence creators than other users. However, Weibo is the most influential platform in terms of emoji use in China [11] and thus, can be seen as a best practice case.

Despite these limitations, the findings of this research provide compelling evidence of an emerging complexity of emoji sequence use in CMC, a topic which needs to be further explored in future research. Chinese social media, specifically Sina Weibo, provide an ideal research environment due to the high level of social media engagement through emoji found within, but perhaps further testing of the findings derived from this study in other national contexts, or as found in different social media platforms could be the focus. Such research would shed light on the impact of the affordances and use culture of the platform as well as on the national cultures of the various users. Further, by understanding self-presentation related to emoji sequences, this study has helped define and describe the research domain. Future studies can build on its findings, for example by examining the role of emoji sequences in user interactions and impression management, which would further shed light on emoji's social usages.

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