

Tilburg University

Investigating the indexicalities of graphic semiotic signs on Chinese social media:

Lu, Ying; Kroon, Sjaak

Publication date:
2020

Document Version
Peer reviewed version

[Link to publication in Tilburg University Research Portal](#)

Citation for published version (APA):

Lu, Y., & Kroon, S. (2020). *Investigating the indexicalities of graphic semiotic signs on Chinese social media: Elder Biaoqing*. (Tilburg Papers in Culture Studies; No. 249).

General rights

Copyright and moral rights for the publications made accessible in the public portal are retained by the authors and/or other copyright owners and it is a condition of accessing publications that users recognise and abide by the legal requirements associated with these rights.

- Users may download and print one copy of any publication from the public portal for the purpose of private study or research.
- You may not further distribute the material or use it for any profit-making activity or commercial gain
- You may freely distribute the URL identifying the publication in the public portal

Take down policy

If you believe that this document breaches copyright please contact us providing details, and we will remove access to the work immediately and investigate your claim.

Investigating the indexicalities of graphic semiotic signs on Chinese social media: Elder Biaoqing



by LU Ying & Sjaak Kroon

Tilburg University
Y.Lu_8@tilburguniversity.edu



December 2020



This work is licensed under a
Creative Commons Attribution-NonCommercial-NoDerivatives 4.0 International License.
To view a copy of this license, visit <http://creativecommons.org/licenses/by-nc/4.0/>

Investigating the indexicalities of graphic semiotic signs on Chinese social media: Elder Biaoqing

Lu Ying, Sjaak Kroon

Abstract

This paper adopts a digital ethnographic approach to analyze concrete communicative practices with Elder Biaoqing (a type of graphic semiotic resources comparable to emojis and memes) on Chinese social media. Following Silverstein's theorizing, it reveals the emergence of multiple indexicalities of Elder Biaoqing that are a result of several social factors: the growth of an elder population online, people's reflections on their communicative needs engendered by specific social facts, and people's ethno-metapragmatics. The study of Elder Biaoqing reveals users' agency in creating semiotic resources, the inequality between digital natives and digital migrants, and the age anxiety in Chinese society. The findings invite a re-imagination of social facts – the existence of an online-offline nexus, and a re-thinking of theories for sociocultural researches in a digital era – ontological perspectives on multimodal resources and digital infrastructures, developments of the theoretical perspective of indexicality, and a total-semiotic-fact approach to digitally-mediated social interaction.

Keywords

Memes, Biaoqing, indexicality, Chinese social media, digital ethnography, ethno-metapragmatics

1. Introduction

On Chinese social media, emojis, in addition to smileys, also include emoticons, stickers, and memes, which are collectively named Biaoqing (表情, literally meaning ‘facial expression’).

Biaoqing featuring a certain figure or theme often come in a set, i.e. a Biaoqing package (表情包).

Biaoqing is a relatively new phenomenon that came into being with the popularization and development of smartphones, cellular networks, and social media, especially instant messaging apps (Wang, 2016; Zheng, 2016). Biaoqing fall in the category of graphic semiotic resources. The majority of studies on Biaoqing regard them as reflections of certain problems becoming manifest in Chinese society, such as growing anxiety and feelings of insecurity of young people (Jiang & Li, 2017), lack of political participation (Zhang, 2016), and growing inequality (Zheng, 2016).

Current research on online graphic semiotic resources shows a number of shortcomings. First, many studies take Biaoqing per se as their topic, and consequently are mainly confined to textual analysis on the micro level (e.g. De Seta, 2018; Ge & Herring, 2018) or to a simplistic mapping of characteristics of Biaoqing to social issues on the macro level (e.g. Jiang & Li, 2017; Zheng, 2016). Second, many graphic resources are regarded as static and non-polysemic (e.g. Jiang et al., 2015; Miller, Kluver, Thebault-Spieker, Terveen, & Hecht, 2017). Third, the dynamism or meaning-uncertainty of graphic resources is often not considered (e.g. Ptaszynski, Dybala, Rzepka, & Araki, 2010; Walther & D’Addario, 2001). Fourth, user practices with graphic resources are not given due empirical attention (e.g. Davison, 2012; Park, Baek, & Cha, 2014). Fifth, the role and function of users’ agency in the development and change of social meanings of semiotic resources are underexposed (e.g. Duque, 2018; Stark, 2018). There are of course studies that do deal with the above lacunae – see e.g. Highfield and Leaver (2016) on

meaning-making uncertainty, Wiggins and Brower (2015) on user activities, and Graham (2019) and Stark and Crawford (2015) on creativity and agency of users – but the general conclusion has to be that there is a considerable lack of studies adopting an ethnographic approach to explore the social and cultural meanings of graphic resources. This contribution will attempt to fill this gap through an in-depth sociolinguistic-ethnographic analysis of the case of Elder Biaoqing on Chinese social media.

2. Theory and methodology

2.1 Indexicality

Indexicality is a central concept in sociolinguistic analysis. As observed by Labov (1963), by pronouncing ‘time’ and ‘house’ in a specific “islander” way, certain groups of inhabitants of Martha’s Vineyard not only referentially could say they owned a house or wanted to know the time but also, not necessarily consciously, indexed their belonging to the island and their not necessarily positive attitude towards tourists from the mainland who pronounced these words in a “mainland” way.

According to Silverstein (2003), through indexicality we can see how micro-social values embody macro-social categories. This means, in Labov’s example, the realization of a specific pronunciation gives away a speaker’s position to a specific societal phenomenon and the people involved – here, mass tourism to Martha’s Vineyard. As such, indexicality is part of creative chronotopic identity work: using language or more in general, semiotic signs in a specific place and time in a specific way reveals one’s identity, i.e. who one is or wants to be and what one thinks of others (see Kroon & Swanenberg, 2020).

Silverstein (2003) argues that regular indexicality – or what he calls n-th order indexicality – is not enough to capture the ethno-metapragmatics of n-th order usage, or the creative

realization of the ideological engagement with the n-th order indexicality. Such ethno-metapragmatic processes are our object of study, i.e. the total linguistic (or rather semiotic) fact – “unstable mutual interaction of meaningful sign forms, contextualised to situations of interested human use and mediated by the fact of cultural ideology” (Silverstein, 1985, p. 220). In addition to n-th order indexicality, says Silverstein (2003, pp. 194-195), we also need n+1st, n+2nd etc. orders of indexicality to understand the “indexical ‘appropriateness-to’ at-that-point autonomously known or constituted contextual parameters: what is already established between interacting sign-users, at least implicitly, as ‘context’ to which the propriety of their usage [...] appeals” and the “indexical ‘effectiveness-in’ context: how contextual parameters seem to be brought into being [...] by the fact of usage of the indexical [...] sign [...] itself.” Appropriateness and effectiveness relate to “indexical presupposition” (what signage fellow sign users expect in a given context) and “indexical entailment” (what signage becomes inescapable in a given indexical context).

Silverstein’s (2003, p. 227) argument boils down to the fact that “all macro-sociological cultural categories of identity, being manifested micro-sociologically [...] as indexical categories, are to be seen as dialectally constituted somewhere between indexical n-th- and n+1st-order value-giving schemata of categorization, wherever we encounter them.”

Biaoqing, used by hundreds of millions of people in Chinese society, are a structural phenomenon. Each instance of usage is a one-time practice of individuals, and at the same time points to “socially and culturally ordered norms, genres, traditions, expectations” (Blommaert, 2010, p. 33), i.e. the indexicality of semiotic resources which points to their social meaning and valuation that are invested with authority, control and evaluation. In this contribution, we will follow netizens’ communicative practices and agency to explore the indexicality of Biaoqing, i.e. we will follow *the total semiotic fact of Biaoqing*.

2.2 Digital Ethnography

Ethnography, emerging from anthropology as a field concerned with the description and analysis of culture (Blommaert & Dong, 2020), is not just a complex of methods and techniques for data collection and analysis, but also a scientific apparatus with specific ontological, epistemological and methodological perspectives on semiotic resources and communication (Blommaert, 2007; Hymes, 1996). The aim of ethnography is to “learn the meanings, norms, patterns of a way of life” (Hymes, 1996, p. 13), which in essence is obtaining comprehensive knowledge of the society under study and revealing the social structure underlying communicative practices and social life.

Digital ethnography is the application of an ethnographic approach to the exploration of culture and society as shaped by digital technologies (Varis, 2016). It does not entail the exclusion of offline data, but emphasizes the epistemological implications of digitalization for communication (Varis & Hou, 2020), for instance how the internet influences and changes the essence and people’s perception of communicative practices. In what follows, the aspects most relevant for this research will be introduced.

Ontologically, Biaoqing are semiotic resources on Chinese social media, and their understanding cannot be detached from the society and culture which they are part of. This means the analysis of Biaoqing should not be confined to the textual level, but should be done with the whole society and culture as background.

Epistemologically, users’ communicative actions with Biaoqing will be taken as the lens to scrutinize the indexicality of Biaoqing. The reason for this is twofold. First, for researchers the lack of physical co-presence and mutual monitoring in online spaces leads to highly incomplete knowledge of who the users under investigation are. As a consequence, the study of online identities needs to resort to concrete communicative actions. Although online communication

is greatly complicated by the uncertainty and unpredictability of user behaviour (Skalski, Neuendorf, & Cajigas, 2017), what remains observable is interactional actions (Blommaert, Lu, & Li, 2019; Blommaert & Maly, 2019). Second, interactional actions are conducted by participants to achieve mutual understanding, which is the process of creating recognizable orders for participants (Garfinkel, 2006). In other words, through the lens of actions we are observing the social facts and social orders that render the actions meaningful (Blommaert, 2018). To depict a clear and holistic picture of people's communicative practices with Biaoqing and their indexicality, this contribution will take communicative action, i.e. what people do with Biaoqing, as its unit of analysis.

Methodologically, researchers need to enter the life-worlds of participants and follow their locally situated experiences in online spaces (Varis, 2016). The first author has spent four years following and observing people's practices with Biaoqing. This data collection experience makes her a connoisseur of Biaoqing, and her insider knowledge provides a reliable reference for selecting and analyzing cases. Since we are aware however of potential pitfalls of being an insider, we applied researcher triangulation by combining our Chinese and Dutch, i.e. insider and outsider perspectives in data analysis.

The validity of this research, which lies in the accurate understanding of the meanings of norms and institutions, is ensured by ethnographers', i.e. the authors', familiarity with and knowledge of the society under investigation; the discipline of the scholarly scientific community on ethnographers; and ethnographers' self-correction in the process of systematic inquiry (Hymes, 1996).

2.3 Data

Data collection took place between September 2015 and January 2019 on various Chinese social media (Sina Weibo, WeChat, Douban, Baidu Post Bar, Baidu Knows, bilibili.com). The

result is a 4,398-item corpus (1,72 GB) of Biaoqing-related data, including posts, chatting records, blogs, Q&A threads, news reports and webpage articles.

There are numerous Biaoqing sharing many similarities. They mostly have one or several of the following characteristics: Cute, Mischievous, Decadent, Dirty, Violent (Jiang & Li, 2017; Zheng, 2016). These characteristics are endorsed as indexes to certain personalities, identities or ideologies (Zhang, 2016) (see Figure1).



	<p>听说你在减肥?</p>  <p>[Rumor has it that you are trying to lose weight?]</p>	 <p>满脸都写着高兴</p> <p>[Happiness is written on my face]</p>	 <p>你爱我还是黄瓜?</p> <p>[Do you love me or cucumber?]</p>	
Cute	Mischievous	Decadent	Dirty	Violent

Figure 1. Examples of currently popular Biaoqing (retrieved from <https://image.baidu.com>, 25 September 2019; our translation, Biaoqing text in square brackets)

Among our data we observed an increasing number of Biaoqing however that did not even come close to reflecting any of the above characteristics. We therefore decided to take this type of Biaoqing, referred to as Elder Biaoqing, specifically and primarily designed for elder netizens, as the object of our study. In order to further pin down these Elder Biaoqing, we resorted to WeChat, the most popular social media in China with one billion daily active users in 2019, and therefore an optimal forum to observe Biaoqing usage.

On WeChat Biaoqing Open Platform, which regularly updates the ranking of the recently most used Biaoqing packages,¹ we checked all the Biaoqing packages that had been ranked top 10 between September and November 2018. Among these 74 are Cute, 10 are Mischievous (of which five are Cute at the same time) and three are Violent (of which two are Cute at the same time). In addition, three are Chinese-character-based and seven are Elder style. Our WeChat observations confirmed what we had already noticed on social media: Elder Biaoqing is a rising style.

The usage of Elder Biaoqing by elder netizens qualifies or indexes them as belonging to a distinct category of elder netizens, i.e. being in-fashion and having a young mentality. We also observed frequent usage of Elder Biaoqing by and between users who do not or only indirectly belong to the category of elder netizens, e.g. their children or grandchildren, the practice of whom is incongruous with and leads to problems in the field of the abovementioned indexicality presuppositions (why do young users send Elder Biaoqing to their peers, i.e. what indexical meaning do they convey) and in the field of entailment (how do Elder Biaoqing meet the needs of young users, i.e., again, what indexical meaning do they convey). The indexicality of Elder Biaoqing therefore cannot simply be understood by referring to an n -th order indexicality but is dialectically connected to that order at an $n+1$ st order indexicality level. There is in other words more to be detected around young netizens' usage of Elder Biaoqing as a sociolinguistic phenomenon than just the fact that such Elder Biaoqing do not fit their social media interaction normativity. The ambition of this contribution therefore is to unravel the $n+1$ st and further order indexicalities of Elder Biaoqing usage.

¹ See <https://sticker.weixin.qq.com/cgi-bin/mmemoticon-bin/emoticonview?oper=billboard&t=rank/index>. The Elder Biaoqing in Figures 3 and 10, and the headers in Figures 4 and 11 were retrieved from this website between September and November 2018.

To achieve this end, five posts and headers of the seven Elder Biaoqing packages that we found on WeChat are taken from the corpus on the basis of the first author’s knowledge of Biaoqing. Table 1 presents the information of the data used for analysis in this contribution.

Source	Time	Quantity
WeChat Biaoqing Open Platform	September to November 2018	Headers of 7 Biaoqing packages
Douban	November 2018	1 post about Biaoqing usage
Sina Weibo	November 2018; January 2019	4 posts about Biaoqing usage

Table 1. Data overview

3. Communicative practices with Elder Biaoqing

The Chinese name of Elder Biaoqing packages – 中老年表情包 – refers to middle-aged and old people. In this context, middle-aged and old, instead of being a demographic demarcation, is a general grassroots description for elder netizens who are not familiar with online culture and whose aesthetic taste for Biaoqing is drastically different from that of young people (Du, 2016). This description is proposed by and takes the stance of the young generation.

In what follows, through the analysis of Biaoqing-related actions in our data sample, the emergence of Elder Biaoqing and the morphing of their indexicality to various values, identities and sociocultural facts will be unravelled.

3.1 Avoiding misunderstanding

With the growing presence of a senior population on social media, there is an increasing number of funny stories of this population’s misunderstanding of the Mischievous, Dirty and Violent Biaoqing, popular among young people. For instance, in Figure 2, after a mother inquired about her son’s work, the latter used a Biaoqing as a joke, but his mother took the text on the Biaoqing literally and completely failed to pick up the intended humour. This

misunderstanding originates from the mother's 'wrong' interpretation of the Biaoqing used by her son, which is an example of the Mischievous, Dirty, Violent Biaoqing dominantly used by young people. The meanings of such young-people Biaoqing are not always predictable from the composing images and/or texts, and it often requires specific knowledge of online popular culture to understand them.



Figure 2. Misunderstanding caused by Biaoqing between mother and son (retrieved from <https://www.douban.com/note/599431525/>, 13 November 2018; our translation, Biaoqing text in square brackets)

Elder Biaoqing gradually came into being as a remedy for avoiding such misunderstandings. Such Biaoqing, as presented in Figure 3, usually feature positive expressions with bright colours and/or positive images, such as young people, flowers, butterflies, a national flag, natural scenes, etc. (GeFM, 2017). A further characteristic of Elder Biaoqing is that the expressions and images are to be taken at face value (Huang & Pan, 2017).



Figure 3. Examples of Elder Biaoqing (our translation; Biaoqing text in square brackets)

One of the top Biaoqing packages in September 2018 is an Elder one, the highest ranking of which is number two on WeChat Biaoqing Open Platform. In the header of this Biaoqing package, the designer Mr. Modo straightforwardly expressed that this Biaoqing package is “specifically designed for your senior relatives,”² which indicates that it is meant for young people to use with their elders (see Figure 4).

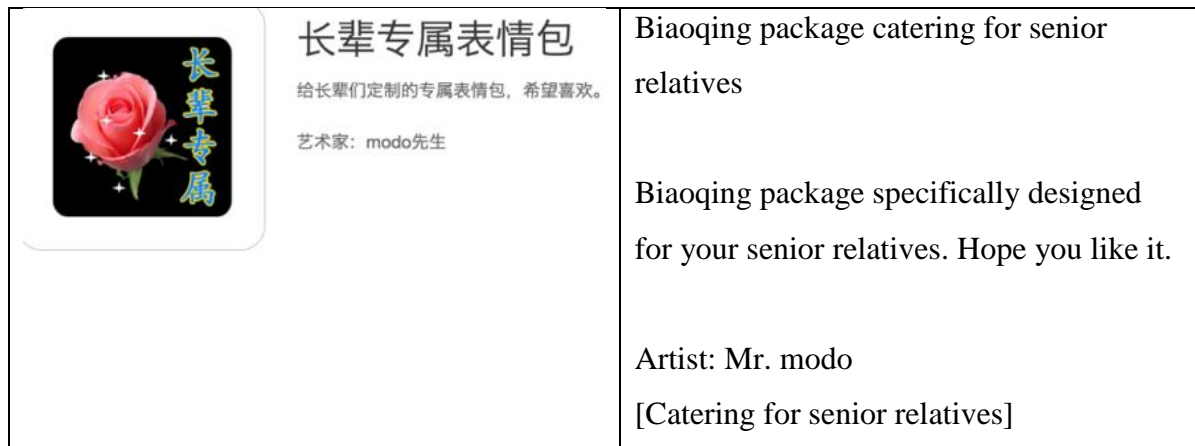


Figure 4. The header of an Elder Biaoqing package (our translation; Biaoqing text in square brackets)

Most of the Elder Biaoqing packages are made by members of the younger generation who take into consideration elders’ (traditional) aesthetic taste, their (inadequate) knowledge of neologisms, and their unfamiliarity with popular online culture (Huang & Pan, 2017). The original purpose of Elder Biaoqing is to avoid misunderstanding during online communication between young people and seniors. The emergence of Elder Biaoqing packages on Chinese social media is a result of the young generation’s reflection on their communicative need to use Biaoqing with seniors. This reflection simultaneously shapes the indexicality of Elder Biaoqing, i.e. they are for elder people incompetent of grasping popular online culture. This

² In Chinese culture, there is a reverential term to refer to senior relatives, i.e. 长辈, which has no equivalent in English. “Senior relative” is the literal translation, but there is a cultural nuance. 长辈 indicates respect for the sake of age, while this deference connotation is missing in the translation “senior relative”.

indexicality points to age and cultural differences between the young and older generations, and is tinged with young people’s superiority, tease or joke regarding elders (Huang & Pan 2017, 2018).

3.2 Appreciation of Elders

Elder people are exposed to Elder Biaoqing through online communication and they appreciate these Biaoqing. For instance, a father, as reported by his daughter, thinks Elder Biaoqing are practical (see Figure 5).

<p>今晚我爹问我表情包怎么用，我说就这么用啊，我发一些给你存着。然后我爹一看我的表情包，他说，唉女儿你的表情包一点都不实用，😂我说哈？哪些实用？于是乎我爹翻他的群聊找了个例子给我看，说你看这些早上好的多实用 🙏对就是中老年表情包🤔🤔🤔</p>	<p>Last night my dad asked me how to send Biaoqing. I said, “You use it this way. I’ll send you some so you can save them on your phone”. After seeing my Biaoqing, my dad said “Your Biaoqing are not practical at all.” I said “What? Then which are practical?” Then he showed me an example from his group chatting, and said “You see these with ‘Good morning’ are very practical.” Right, they are elder Biaoqing</p>
--	--

Figure 5. A senior’s opinion of Elder Biaoqing (retrieved from https://www.weibo.com/2121087914/H9GAVxwNy?refer_flag=1001030103, 7 January, 2019; our translation)

In this example, the father encountered Elder Biaoqing in a WeChat group. Regarding them as handy and useful, he asked his daughter how to send Biaoqing. Obviously the father and the daughter have different perceptions of and experiences with Biaoqing. For the father, the Elder Biaoqing he encountered are pretty much what he knows about Biaoqing, and he has no idea how to access them. For the daughter, however, Elder Biaoqing is only a trivial part of her Biaoqing repertoire, as indicated by the palm-over-face laughing-crying Biaoqing in the final line of her post and the fact that she shared this incident in a joking tone with her peers on

Weibo, the Chinese equivalent of Twitter. The user base of Weibo, 411 million by March 2018, is much smaller than that of WeChat, but the user group is much younger than that of WeChat (Tencent, 2018).

There are many seniors who are fond of Elder Biaoqing and have become very resourceful with them. As a consequence, a young person in a WeChat group where the majority are middle-aged people might feel pressed to use Elder Biaoqing, as in Figure 6.


<p>混迹在中老年购物群的我急需表情包👉 怎样才能显得我不是异类 求教</p>	<p>Mingling in a WeChat shopping group for elders, I'm in urgent need of Biaoqing. What should I do to make myself not alien in this group?</p>
	<div data-bbox="831 875 1272 1137" style="border: 1px solid black; padding: 5px; margin-bottom: 10px;"> <p>[Good people will be happy] [Good morning] [Happiness be with your forever]</p> </div> <div data-bbox="831 1189 1272 1413" style="border: 1px solid black; padding: 5px; margin-bottom: 10px;"> <p>[It is freezing] [Cold] [Please take care]</p> </div> <div data-bbox="831 1552 1272 1796" style="border: 1px solid black; padding: 5px;"> <p>[Good morning] [Good health] [Good mood] [Everything will be good]</p> </div>

Figure 6. Weibo post of elder netizens' usage of Elder Biaoqing (retrieved from https://www.weibo.com/2133789377/H9JA296AS?refer_flag=1001030103_&type=comment#_rnd1546870404529, 7 January, 2019; our translation, Biaoqing text in square brackets)

The examples in Figures 5 and 6 reflect that elders identify with Elder Biaoqing, eagerly access them and enthusiastically use them. As using Biaoqing is a typical online communicative practice of young people, for elders, this practice is related to being chic (Zhou, Hentschel, & Kumar, 2017). In the eyes of seniors, Elder Biaoqing are not only practical in a pragmatic sense (as stated in the example in Figure 5), but also evaluated as indices to elders' chicness and desire to participate in online culture. Elder Biaoqing, for elders, have acquired the indexicality of being modern and/or having a young-people mentality, both highly positive valuations in contemporary China.

3.3 Usage of Elder Biaoqing between young and elder people

Although Elder Biaoqing respond to the aesthetic taste of elders, their designers are mostly young people, which makes it advantageous for young people to further rationalize novel ways of interpreting, using or modifying them. Telling from the first author's insider knowledge of Biaoqing ecology in Chinese society, a representative example is how young people use Elder Biaoqing with their (grand)parents or aunts/uncles with a hidden feeling of superiority. In Figure 7, a screenshot of the chatting between a son and his mother, the mother used an Elder Biaoqing, after which the son replied with another one. In this exchange, out of pragmatic considerations, the son used Elder Biaoqing to be on the same page with his mother so that their communication would take a smooth course.



Figure 7. Chatting record between a son using Elder Biaoqing with his mother (retrieved from

https://www.weibo.com/5863930010/GEwkc2etS?refer_flag=1001030103_&type=comment#_rnd1541337852791, 4 November, 2018; our translation, Biaoqing text in square brackets)

However, this is only half of the story. After this chatting, the son posted the chatting record headed by a short text on Weibo (see Figure 8) in order to share this experience with his peers. In the text message of the post, the son framed the practice of replying to his mother's Elder Biaoqing with the same type as a competition of Biaoqing resources – a perspective the mother is unaware of – and underlined the fact that he, a millennium youngster, is resourceful in Biaoqing, even when it comes to niched Elder Biaoqing. In doing so, on Weibo he was highlighting his identity as a member of the young generation who is aware of elders' use of a different type of Biaoqing, and as a person who has sufficient Biaoqing resources for various scenarios, including responding to his mother who uses Elder Biaoqing with the same type of Biaoqing.

中老年表情包??00后永不认输	Elder Biaoqing? As a person born after the millennium, I won't surrender.
-----------------	---

Figure 8. Text in the Weibo post of the son (our translation)

In this example, the son conspicuously suggested the different status of Elder Biaoqing compared to that of the Biaoqing he usually uses. Such practice of the young generation is *de facto* a reflection of the two above-discussed indexicalities. Young people, by using Elder Biaoqing and ‘problematizing’ such communicative practice on a meta level, distinguish themselves from elders in terms of Biaoqing competence. As a result, Elder Biaoqing become indices to Biaoqing gurus and online culture-savvy persons, which is in essence a reflection of social status. Note that this indexicality has currency mainly among young people and not among elders.

3.4 Usage of Elder Biaoqing Between Young People

Building on the above-discussed indexicalities, a further step of reflection on the part of the young generation takes place, i.e. the use of Elder Biaoqing for communication with their peers, mostly in a light-hearted play, as illustrated in the conversation between two young women in Figure 9.



Figure 9. Elder Biaoqing usage between young people (retrieved from https://www.weibo.com/5019193461/GDCuTvYUG?refer_flag=1001030103_&type=comme)

nt#_rnd1547044070505, 4 November, 2018; our translation, Biaoqing text in square brackets)

The young woman's practice of using Elder Biaoqing with her peer as shown in Figure 9 forms a contrast with her own identity as a young person. In their chitchat, her friend in a joking way said that the previous stretch of communication, polite and imbued with positive energy, made her feel disgusted, causing her to switch to the Cute and/or Mischievous type of Biaoqing which young people usually use (see the Biaoqing with "hahaha" in Figure 9). However, in their last round of chatting, both used an Elder Biaoqing to end the conversation.

The two friends in this example are not middle-aged, yet they enthusiastically used Elder Biaoqing with each other. They are in other words fully aware of the above-discussed indexicalities of Elder Biaoqing and tacitly reached the agreement to use Elder Biaoqing with each other, which is premised on their shared perception and knowledge of Elder Biaoqing. This practice highlights their 'sameness', i.e. their shared identities of Biaoqing-gurus and members of the young generation.

Note that in this communicative event, both participants endorsed the Biaoqing-related behavioral trait of elders, i.e. using Biaoqing that uphold positivity. They also tacitly followed the norm that the texts on Elder Biaoqing are to be understood literally. For instance, they took the "再见" (bye-bye) on the Elder Biaoqing as a polite greeting, instead of as an expression of contempt, dissatisfaction and irony, which is a result of nonlinear transformation (Blommaert, 2015) of the indexicality of "再见" on Chinese social media through the collective negotiation (or ethno-metapragmatics) of (young) people (Nie & Lu, 2018). This example is an instance of reflection on the characteristics of Elder Biaoqing. Since it has been widely accepted that the texts and images of Elder Biaoqing are to be taken literally, this characteristic is collectively and tacitly accepted as a reference for interpreting Elder Biaoqing even when they are used between young people, and it has become a usage norm of Elder Biaoqing.

When we go through the Elder Biaoqing packages, we find that all the Elder Biaoqing are very simple phatic expressions for conviviality (see Figure 10). As Elder Biaoqing are palpably different from the currently dominant Cute, Mischievous, Dirty and Violent ones, this difference in form is enough to index the intended uptake of Biaoqing purposefully designed in Elder style. The established form-norm configuration of Elder Biaoqing is employed by young people to revitalize the expressive power of daily mundane phatic expressions which have been eclipsed by the currently dominant Biaoqing, and to rescue simple phatic expressions from being interpreted as perfunctory and insincere. This is the result of people’s reflection on the usage and interpretation characteristics typical of Elder Biaoqing.



Figure 10. Examples of Elder Biaoqing (our translation; Biaoqing text in square brackets)

Taking this argument a step further, one could suggest that the style of Elder Biaoqing is employed to make Biaoqing packages specifically for young people to use. This claim is based on four observations. First, among one billion WeChat users (Tencent, 2018), the proportion of users above 50 years old (80 million, 7.4%; Zhou, 2019) is too small to make Elder Biaoqing packages reach the top 10. This means it is mainly young people who are using them. Second, among the seven Elder Biaoqing packages ranked top 10, only one includes ‘senior’ in the title, two mention ‘senior’ in the header, and the other four do not mention elder or senior at all. Third, on many webpages, using Elder Biaoqing is tacitly regarded as the practice of young

people. For instance, an article on Sohu³ describes Elder Biaoqing as a powerful resource in Douyu, literally a fight with images,⁴ a typical practice of young people: “When you are losing the upper hand in Douyu, Elder Biaoqing often can help you miraculously. They not only strike back on your opponent, but also have the ironic effect of ‘hehe’,⁵ helping you win the fight without really fighting.” Fourth, during chatting with friends, the first author heard of stories of young people in their twenties using Elder Biaoqing with their peers. That is to say, Elder Biaoqing are not solely for using with elders anymore, but for people, both young and senior, to use for their own sake, as shown in the headers in Figures 5 and 11.

Elder Biaoqing package profile	Translation	Highest ranking
 <p>花好月圆合家欢</p> <p>精心手绘蝴蝶玫瑰爱心花草笑脸，漂亮组合，传递快乐。 家庭、爱人、情侣、亲朋好友、长辈中老年都可用，日常问候聊天经典表情 中秋快乐、国庆快乐、合家欢乐，节日祝福。</p> <p>艺术家：三宝</p>	<p>Blooming flowers, full moon and happy family Beautiful combination of butterflies, roses, hearts and smiles to deliver happiness. Can be used with family, couples, friends, and seniors. Include the classic daily phatic expressions and Biaoqing. Happy mid-autumn festival, happy national day, happiness for your whole family, good wishes for holidays. Designer: 三宝 [Blooming flowers and full moon]</p>	<p>1</p>
 <p>家庭表情</p> <p>忙碌的日子，记得照顾好自己。</p> <p>艺术家：凡人工作室</p>	<p>Family Biaoqing During busy days, don't forget to take good care of yourself. Designer: 凡人工作室 [Miss you]</p>	<p>1</p>

³ See http://www.sohu.com/a/206317823_425113; retrieved November 15, 2018.

⁴ Douyu (斗图) literally means fight with images. In this case, the image refers to Biaoqing. Douyu is a new form of online communication where interlocutors reply to each other with Biaoqing as a ludic competition of showing off the Biaoqing resources they possess.

⁵ Hehe, an onomatopoeia of laughter, is used by many Chinese netizens as an expression of contempt, disagreement or irony (Luo, 2017; Nie & Lu, 2018).

	<p>甜蜜情话 思念你的心最甜 艺术家: 凡人工作室</p>	<p>Honey words The heart missing you is the sweetest. Designer: 凡人工作室 [Miss you so much]</p>	1
	<p>亲爱的好想你 情侣浪漫情话、爱人甜蜜情话、夫妻私密情话。 玫瑰、爱心、蝴蝶的美丽组合爱意浓浓, 家庭日常 问候聊天也可使用。 我的真心话只说给你听。 艺术家: 三宝</p>	<p>My dear I miss you so much Honey words between couples. Beautiful combination of rose, heart and butterfly to express love. Can also be used for daily chatting in the family. My true words are only for you. Designer: 三宝 [Love you]</p>	3
	<p>我爱我家我爱你 一切为了你, 我爱你, 我爱我家。 精心手绘蝴蝶玫瑰、花鸟虫鱼、笑脸爱心, 漂亮组 合, 传递幸福快乐 家庭、爱人、情侣、亲朋好友、长辈中老年都可使 用, 日常问候聊天经典表情 艺术家: 三宝</p>	<p>I love my family I love you All for you. I love you and I love my family. Beautiful combination of butterfly, rose, flower, bird, worm, fish, smiling face and heart to pass happiness. Can be used with family, couples, friends, and seniors. Include the classic daily phatic expressions. Designer: 三宝 [Miss you]</p>	5
	<p>玫瑰爱心问候 蓝天白云, 红花绿叶! 玫瑰传情, 用心聊, 聊开心! 祝您聊天愉快, 幸福每一天! 艺术家: Ivendoit</p>	<p>Greetings with rose and love Blue sky, white cloud, red flowers and green leaves! Roses for love, chat heartfully and chat happily! Wish you enjoy chatting and happy every day! Designer: Ivendoit</p>	6

Figure 11. Headers of six Elder Biaoqing packages (September-November 2018; our translation, Biaoqing text in square brackets)

The result of this reflection is the resemiotization (Iedema, 2003; Leppänen, Kytölä, Jousmäki, Peuronen, & Westinen, 2014) of Elder Biaoqing: they are extracted from previous frames and inserted in new contexts for communication. This reflection brings about new usage norms for

Elder Biaoqing – to be taken at face value, and new resources to Biaoqing repertoires – Biaoqing for polite greetings. A corollary of this process is the new indexicality of Elder Biaoqing, i.e. polite and friendly phatic expressions for conviviality.

The example of Elder Biaoqing usage between two young women (see Figure 9) was collected from a Weibo post, the text of which is presented in Figure 12. Apart from the reflection embodied in the communicative practices per se, there is another layer of reflection embodied in this post.

步入中老年表情包.....	Step to Elder Biaoqing package.....
下一步	Next step
广场舞 🍷🍷	Square dancing

Figure 12. A Weibo post about Elder Biaoqing usage between young people (our translation)

The text of the post indicates that the poster was sharing the practice of using Elder Biaoqing as a joke. She also joked that the next step for her would be to engage in square dancing, a typical activity of seniors in China.⁶ In so doing, she intentionally connected a typical offline activity of elders to Elder Biaoqing. That is to say, the offline practices of seniors are also added to the indexicality bundle of Elder Biaoqing.

The poster did not use Elder Biaoqing purposefully to mock elders. It is more about her own identity. As indicated in her post, she was aware of her age difference with elders, but she was using Elder Biaoqing, and might later go a step further to do elder dancing. On the surface, she was mocking her deeds unmatching with her age; on a deeper level, her post is a reflection of the age anxiety in Chinese society, the understanding of which requires some sociocultural background information. In modern Chinese society, the traditional Confucian doctrine “to

⁶ In China, square dancing is an activity participated mostly by retired people in public squares and plazas as an exercise.

stand firm at thirty”⁷ is still quite influential in evaluating the integrity of individuals, even though it is not really applicable anymore. Nowadays it is not so easy for people to build a family and have a successful career at such a young age (Zhang, 2017). Caught between the stress of the Confucian criterion and such social facts, young people are experiencing age anxiety – the fear of getting old before achieving life goals and being left behind (Wang, 2017) – which is the social origin of the oxymoronic neologism ‘middle-aged teenage girl’ (中年少女) to refer to young women born in the 1990s (Weixiaobao, 2017). In this case, Elder Biaoqing happen to be the media that reflects such anxiety. Consequently, Elder Biaoqing by chance become indices of age anxiety in Chinese society. Note that this indexicality is conspicuously different from the previous ones in the sense that it is deeply rooted in people’s subconscious reaction to the precariat state of educated young people in China (Du, 2016), and that it might not be distinctly felt, not even by young people who use Elder Biaoqing this way.

4. Discussion

Elder Biaoqing are originally created for the sake of elders by young people. The indexicality of Elder Biaoqing is continuously morphing: indexing young-mentality and chicness for elders; indexing the age of target recipients and Biaoqing guru identity for young people; indexing polite and friendly conviviality; reflecting age anxiety among young people in Chinese society. Each of these indexicalities is a result of collective negotiation and construction of meanings and norms on the basis of people’s reflections on their communicative practices, the process of which constitutes what Silverstein (2003) terms ethno-metapragmatics. The emergence and

⁷ Confucius, *Lunyu Wei Zheng*. Available at <http://www.camcc.org/lunyu/wei-zheng-4-8-summary> (accessed 20 November 2017).

development of multiple indexicalities do not entail dialectic, fixed or exclusive relations among them. Different indexicalities might co-exist in the same instance of Elder Biaoqing usage for different participants or target audiences, as illustrated in the example of Elder Biaoqing usage between a mother and her son in Figures 7 and 8.

The emergence and popularity of Elder Biaoqing is one of the trends in the Biaoqing landscape. This trend, resulting from multiple factors, reflects a number of concrete social facts that point to new perspectives for approaching online phenomena.

First, the emergence of Elder Biaoqing is caused by the growing presence of elders, which is premised on the accessibility and affordability of digital technologies that have become part of the social structure underlying communicative practices. Different from the young generation of “digital natives” growing up with digital media (Prensky, 2001, p. 1), these elders are “digital migrants” (p. 2). When they get online, they bring with them their semiotic resources and exert influence on the social media they use through their semiotic practices as well as aesthetic tastes. The emergence of Elder Biaoqing was catalyzed by elder digital migrants’ ignorance of online popular culture, especially their lack of knowledge of the Cute, Mischievous, Decadent, Dirty, Violent Biaoqing young digital natives use. Elder Biaoqing per se become part of the forever changing online culture. This is in essence a reflection of the dynamics of the Biaoqing landscape, the dynamics of online semiotic resources.

Second, although Elder Biaoqing are designed for the sake of elders, they are free for everyone to use. The meager number of elder netizens in comparison with young netizens renders them a minority. What is more, elder digital migrants are usually much less efficient in making use of the affordances of social media, such as the WeChat Biaoqing Open Platform. An inevitable consequence of this is that young digital natives to a great degree have more capacity to construct the meaning and usage norms of Elder Biaoqing on their terms. This in turn brings about e-inequalities between digital natives and elder digital migrants.

Third, communicative practices with Elder Biaoqing are based on people's engagement with established indexicalities, or their presupposition of usage appropriateness in that context. In communication, people demonstrate such engagement yet simultaneously reflect on it, which leads to the moderation of communicative practices or the entailment of creativity and effectiveness fitting in that context (Silverstein, 2003). For instance, young people use Elder Biaoqing as a reaction to the aesthetic taste of the senior generation, a possession of valuable resources, a claim of superiority in the online world, a creation of new communicative resources, a reaction to their stress. People's reflection on their communicative practices brings about the interplay between presupposition and entailment of Biaoqing usage, wherein new norms are established, and new higher order indexicalities are constructed and precipitated, the process of which Silverstein (2003) terms ethno-metapragmatics.

Fourth, ethno-metapragmatic practices exist in an online-offline nexus wherein both zones shape each other in complex ways, resulting in new practices of social interaction, which therefore must be seen as one inseparable field, instead of one space mirroring the other.

Fifth, the establishment of norms and indexicalities mentioned so far are materialized in the process of the widespread of specific ways of using Elder Biaoqing. Through repeated reproduction of certain communicative practices, people collectively and tacitly precipitate specific indexicalities on Elder Biaoqing. The user agency/creativity, and communicative potentials and social-cultural effects of Elder Biaoqing as manifested in this study are concrete empirical evidence that graphic semiotic signs, or in general multimodal semiotic signs, are the results and reflections of unfolding social processes, and therefore should be of focal concern for sociolinguistic and sociocultural research.

5. Conclusion

This research borrowed the concept of ‘indexicality’ from Silverstein (2003), and applied it, with different epistemological and methodological perspectives, to the study of online culture which is highly dynamic and rapidly changing. The analysis reveals a picture of active and intensive ethno-metapragmatic practices by (young and old) Elder Biaoqing users driven by a variety of communicative needs, the results of which are the multiple indexicalities of Elder Biaoqing that were shown in our analysis, and the process of which reveals the complicated interplay between semiotic resources, their users and Chinese society.

Different from indexical order where “ n -th and $n+1$ st order indexical values are, functionally, in dialectic competition one with another” and “ $n+1$ st order indexicality would tend to supplant or at least to blend with such n -th order value” (Silverstein, 2003, p. 194), the multiple indexicalities of Elder Biaoqing, instead of coming in an ordinal degree and in dialectic relation with each other, co-exist in the reservoir of semiotic resources, and there is no clear-cut ordinal sequence of the emergence of the indexicalities. Elder Biaoqing used by different people in different communicative situations, index drastically different identities and values. Their multiple indexicalities are not equally available or accessible to all users, as illustrated in the case of the communication between a mother and her son in Figures 7 and 8. In other words, people’s capacity to deploy Elder Biaoqing is truncated, and the multiple indexicalities of Elder Biaoqing are stratified.

Different from indexical order which demonstrates the dialectic competition between orders of indexicality mediated through “formal variation as different ways of saying ‘the same’ thing” (Silverstein, 2003, p. 216), the application of the indexicality analysis to communicative practices with semiotic resources on Chinese social media reveals a picture of the coexistence

of multiple indexicalities reflected in different actions performed with the same semiotic resources.

The above-discussed differences in essence reflect the differences between phenomena in the non-digital era and phenomena nowadays omnipresent online. What is more, such online phenomena cannot be simplistically viewed as mirroring the offline, but are the result of the complex interaction of online and offline factors, including but not confined to the affordances of digital infrastructures, people's creativity and agency, social ethos, and culture. In this sense, this research on the one hand expands the understanding of "indexical order" (Silverstein, 2003, p. 193) and thereby enriches the toolkit to describe, analyze and understand semiotic phenomena and society, and on the other hand invites a re-imagination of social facts – the existence of an online-offline nexus, and a re-thinking of theories for sociocultural research in a digital era – ontological perspectives on multimodal resources and digital infrastructures, developments of the theoretical perspective of indexicality, and a total-semiotic-fact approach to digitally-mediated social interaction.

References

- Blommaert, J. (2007). On scope and depth in linguistic ethnography. *Journal of Sociolinguistics*, 11, 682–688.
- Blommaert, J. (2010). *The sociolinguistics of globalization*. Cambridge, UK: Cambridge University Press.
- Blommaert, J. (2015). Meaning as a nonlinear effect: The birth of cool. *AILA Review*, 28, 7–27.
- Blommaert, J. (2018). *Durkheim and the Internet: On sociolinguistics and the sociological imagination*. London, UK: Bloomsbury.
- Blommaert, J., & Dong, J. (2020). *Ethnographic fieldwork: A beginner's guide* (2nd ed.). Bristol, UK: Multilingual Matters.
- Blommaert, J., Lu, Y., & Li, K. (2019). From the self to the selfie. *Tilburg Papers in Culture Studies*, (paper 222). <https://www.tilburguniversity.edu/research/institutes-and-research-groups/babylon/tpcs>
- Blommaert, J., & Maly, I. (2019). Invisible lines in the online-offline linguistic landscape. *Tilburg Papers in Culture Studies*, (paper 223).

<https://www.tilburguniversity.edu/research/institutes-and-research-groups/babylon/tpcs/item-paper-223-tpcs.htm>

- Davison, P. (2012). The language of internet memes. In M. Mandiberg (Ed.), *The social media reader* (pp. 120–134). New York: New York University Press.
- De Seta, G. (2018). Biaoqing: The circulation of emoticons, emoji, stickers, and custom images on Chinese digital media platforms. *First Monday*, 23(9). <https://firstmonday.org/ojs/index.php/fm/article/view/9391/7566>
- Du, C. (2016). *The birth of social class online: The Chinese precariat on the internet*. Doctoral dissertation, Tilburg University, Tilburg, the Netherlands. <https://www.tilburguniversity.edu/about/schools/humanities/departments/dcu/dissertations-culture-studies>
- Duque, D. (2018). I heart [emoji]: Understanding the effects of a new language of self-expression. *Plot(S)*, 5, 54–66. https://scholar.google.com/scholar?hl=zh-CN&as_sdt=0%2C5&q=I+Heart+%5BEmoji%5D+v5.05&btnG=
- Garfinkel, H. (2006). *Seeing sociologically: The routine grounds of social action*. (A. Rawls, Ed.). Boulder, CO: Paradigm Publishers.
- Ge, J., & Herring, S. C. (2018). Communicative functions of emoji sequences on Sina Weibo. *First Monday*, 23(11). <https://journals.uic.edu/ojs/index.php/fm/article/view/9413/7610>
- GeFM. (2017, November 17). *中老年表情包使用指南* [Manual of Biaoqingbao for middle-aged and old people]. <http://news.sina.com.cn/o/2017-11-17/doc-ifynwxum3377254.shtml>
- Graham, S. L. (2019). A wink and a nod: The role of emojis in forming digital communities. *Journal of Cross-Cultural and Interlanguage Communication*, 38, 377–400. <https://www.degruyter.com/view/j/mult.2019.38.issue-4/multi-2018-0037/multi-2018-0037.xml>
- Highfield, T., & Leaver, T. (2016). Instagrammatics and digital methods: Studying visual social media, from selfies and GIFs to memes and emoji. *Communication Research and Practice*, 2, 47–62.
- Huang, Z., & Pan, L. (2017, July 4). “中老年表情包”背后的话语霸权 [Discourse hegemony behind the “middle-aged Biaoqingbao”]. People’s Daily Online. <http://opinion.people.com.cn/n1/2017/0704/c1003-29380442.html>
- Huang, Z., & Pan, L. (2018). 从中老年表情包看网络空间的群体身份区隔 [Explore segregation of group identity through middle-aged Biaoqingbao]. *Journal of Communication University of China*, 2018(4), 97–102.
- Hymes, D. (1996). *Ethnography, linguistics, narrative inequality: Toward an understanding of voice*. Bristol, UK: Taylor & Francis.
- Iedema, R. (2003). Multimodality, resemiotization: Extending the analysis of discourse as multi-semiotic practice. *Visual Communication*, 2, 29–57.
- Jiang, F., Liu, Y.-Q., Luan, H.-B., Sun, J.-S., Zhu, X., Zhang, M., & Ma, S.-P. (2015). Microblog sentiment analysis with emoticon space model. *Journal of Computer Science and Technology*, 30, 1120-1129.
- Jiang, J., & Li, Y. (2017). 网络涂鸦表情包: 审丑狂欢抑或娱乐的大麻 [Web graffiti Biaoqingbao: Carnival of ugly aesthetic or marijuana for entertainment]. *Exploration and Free Views*, 1(1), 131–136.

- Kroon, S., & Swanenberg, J. (2020). Introducing chronotopic identity work. In S. Kroon & J. Swanenberg (Eds.), *Chronotopic identity work: Sociolinguistic analyses of cultural and linguistic phenomena in time and space* (pp. 1–15). Bristol, UK: Multilingual Matters.
- Labov, W. (1963). The social motivation of a sound change. *Word*, 19, 273–309.
- Leppänen, S., Kytölä, S., Jousmäki, H., Peuronen, S., & Westinen, E. (2014). Entextualization and resemiotization as resources for identification in social media. In P. Seargeant & C. Tagg (Eds.), *The language of social media: Identity and community on the Internet* (pp. 112–136). Basingstoke, UK: Palgrave Macmillan.
- Luo, Q. (2017). 历史语用学视角下的语义演变机制：以拟声词‘呵呵’的语义嬗变为例 [Semantic change in a historical pragmatic perspective: The case of the onomatopoeic hēhe]. *Journal of Zhejiang International Studies University*, (3), 26–33.
- Miller, H., Kluver, D., Thebault-Spieker, J., Terveen, L., & Hecht, B. (2017). Understanding emoji ambiguity in context: The role of text in emoji-related miscommunication. In *Eleventh International AAAI Conference on Web and Social Media* (pp. 152–161). Palo Alto, CA: The AAAI Press.
- Nie, H., & Lu, Y. (2018). Non-linear transformation of multimodal resources on Chinese social media. Unpublished article.
- Park, J., Baek, Y. M., & Cha, M. (2014). Cross-cultural comparison of nonverbal cues in emoticons on Twitter: Evidence from big data analysis. *Journal of Communication*, 64, 333–354.
- Prensky, M. (2001). Digital natives, digital immigrants part 1. *On the Horizon*, 9(5), 1–6.
- Ptaszynski, M., Dybala, P., Rzepka, R., & Araki, K. (2010). Towards fully automatic emoticon analysis system (^o^). In *Proceedings of The Sixteenth Annual Meeting of The Association for Natural Language Processing (NLP-2010)* (pp. 583–586). https://www.anlp.jp/proceedings/annual_meeting/2010/index.html
- Silverstein, M. (1985). Language and the culture of gender: At the intersection of structure, usage, and ideology. In E. Mertz & R. J. Parmentier (Eds.), *Semiotic mediation: Sociocultural and psychological perspectives* (pp. 219–259). New York, NY: Academic Press.
- Silverstein, M. (2003). Indexical order and the dialectics of sociolinguistic life. *Language & Communication*, 23, 193–229.
- Skalski, P. D., Neuendorf, K. A., & Cajigas, J. A. (2017). Content analysis in the interactive media age. In K. A. Neuendorf (Ed.), *The content analysis guidebook* (pp. 201–403). London, UK: Sage.
- Stark, L. (2018). Facial recognition, emotion and race in animated social media. *First Monday*, 23(9). <https://journals.uic.edu/ojs/index.php/fm/article/view/9406/7572>
- Stark, L., & Crawford, K. (2015). The conservatism of emoji: Work, affect, and communication. *Social Media+ Society*, 1(2), 1–11.
- Tencent. (2018). 2018 微信数据报告 [WeChat statistics report 2018]. <https://support.weixin.qq.com/cgi-bin/mmsupport-bin/getopendays>
- Varis, P. (2016). Digital ethnography. In A. Georgakopoulou & T. Spilioti (Eds.), *The Routledge handbook of language and digital communication* (pp. 55–68). London, UK: Routledge.

- Varis, P., & Hou, M. (2020). Digital approaches in linguistic ethnography. In K. Tusting (Ed.), *The Routledge handbook of linguistic ethnography* (pp. 229–240). London, UK: Routledge.
- Walther, J. B., & D’Addario, K. P. (2001). The impacts of emoticons on message interpretation in computer-mediated communication. *Social Science Computer Review*, 19, 324–347.
- Wang, Q. (2017, March 22). 25岁的‘中年危机’有何启示? [Implications of “midlife crisis” at the age of 25]. Xinhuanet. http://www.xinhuanet.com//comments/2017-03/22/c_1120669456.htm
- Wang, Y. (2016). 浅析“表情包”兴起的特点及其影响 [Analysis of the emergence of “Biaoqingbao” and their influence]. *Chuanbo Yu Banquan*, 2016(9), 116–117. <http://www.cqvip.com/qk/71717x/201609/670398682.html>
- Weixiaobao. (2017, December 26). 中年少女的八大特征 你中了几条? [How many of the eight characteristics of middle-aged teenage girls do you have?]. http://www.sohu.com/a/212913551_570242
- Wiggins, B. E., & Bowers, G. B. (2015). Memes as genre: A structural analysis of the memescape. *New Media & Society*, 17, 1886–1906.
- Zhang, N. (2016). 消解作为抵抗“表情包大战”的青年亚文化解构 [Dispelling as resistance: Analysis of the youth sub-culture “Biaoqingbao Battle”]. *Modern Communication*, 2016(242), 126–131.
- Zhang, X. (2017, April 25). 90后‘中年危机’: “假矫情”还是“真焦虑”? [“Midlife crisis” of the 90s generation: “Fake affectation” or “true anxiety”?]. Xinhuanet. http://www.xinhuanet.com//politics/2017-04/25/c_129556947.htm
- Zheng, M. (2016). 网络表情包的流行与话语空间的转向 [The popularity of Biaoqingbao online and the shift of discourse space]. *Editorial Friend*, 2016(8), 42–46.
- Zhou, R., Hentschel, J., & Kumar, N. (2017). Goodbye text, hello emoji: Mobile communication on WeChat in China. In *Proceedings of the 2017 CHI conference on human factors in computing systems* (pp. 748–759). New York, NY: ACM.
- Zhou, C. (2019, March 30). 微信生态下8000万中老年网民的电商创业机会 [Creative opportunity for e-commerce in a WeChat ecology with 80 million middle-aged and elder internet users]. 36Kr. <https://36kr.com/p/5189996>