Exploring Offline Context and Consciousness in Everyday Social Media Use

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Abstract

Much social media research has been done to understand interactions and communication on social media, while less attention has been paid to the offline contexts of social media use. How do offline contexts influence everyday social media use? This paper presents an interview study with a focus on Chinese citizens' use of social media in everyday activities. The study found that informants' use of social media and attention on social media was intricately related to their offline social and physical contexts, as well as their varying levels of consciousness. The work draws on activity theory to analyze the interplay between informants' consciousness, everyday social media use, and offline contexts. Implications for design and social media research are provided.

Keywords. Consciousness · social media · activity theory · offline context

1   Introduction

Social media data such as likes on Facebook and retweets on Twitter are widely used as basic unit of analysis in the examination of human behavior. However, seemingly similar social media data generated by different human behaviors might carry different meanings, values, and intentions. Palen and Anderson warned that critical distinctions between human behaviors might be ignored in the analysis of large volumes of social media data [1]. Wulf et al. argued that investigations of online materials can be complemented by on-the-ground studies that looked into local conditions that interact with people's use of social media [2]. Therefore, it becomes important to understand the relationship between social media behavior and offline contexts in everyday life.

This paper presents an interview study where 32 regular social media users from mainland China described their experience and rationale behind social media use in a variety of everyday activities. Drawing from activity theory, the paper analyzes the complicated interplay between informants' everyday social media use, consciousness, and offline social and physical circumstances. Consciousness refers to "a phenomenon that unifies attention, intention, memory, reasoning, and speech" [3]. Informants often used social media with attention to their social and physical

surroundings. Informants' consciousness for social media changed when they needed to attend to offline contexts. The contributions include a detailed analysis of how offline contexts influence people's interaction with social media; in-depth discussion of people's relatively low consciousness for social media when social media is not the major artifact that people interact with; and implications for social media design and social media research.

2 Related Work

2.1 Social Media Activity and Online Contexts

In the last few years, a surging body of research examines individuals' high-level consciousness in making sophisticated, deliberate decisions of social media use. For instance, there are studies demonstrating how people coordinate diverse social media platforms. Through an interview study Zhao et al. revealed how people considered both content and audience simultaneously as they decided which platform to use. They also showed how each individual contrasted their own "communication ecosystem" [4], indicating careful consideration of platforms' advantages and disadvantages. Semaan et al. conducted a qualitative study of social media use for political deliberation and found that their participants purposefully used multiple platforms to obtain diverse political information and engage in respectful and reasoned discussions with different people [5]. Some research revolves around information curation where individual citizens carefully aggregate and disseminate information to large numbers of people. Monroy-Hernández et al. reported that a group of Mexican curators developed complicated views of other curators and their audience in curating information about the Mexican Drug War [6].

Much research has been done to reveal people's careful choices and nuanced practices on and around social media, yielding insights into conscious use of social media and deriving design implications to facilitate such use. However, little attention has been paid to the offline, local contexts within which people use social media.

2.2 Activity Theory

Activity theory (AT) is a descriptive framework mostly developed by Soviet psychologists Lev Vygotsky [7] and Alexei Leont'ev [8]. AT is widely adopted in the human-computer interaction literature to contextualize people's interactions with artifacts [9–12]. AT seeks to understand the relationship between the human mind and activity as socially and culturally situated phenomenon, and attempts to integrate three perspectives: the objective, the ecological, and the sociocultural [13]. AT posits that activity connects human and their external environments and plays a central role in development of human mind [14]. The objective of AT is the unity of consciousness and activity, where consciousness treats the human mind as a whole and activity refers to human interactions with the objective reality [13]. AT developed a hierarchy of activity, where an activity is composed of actions, and an action is made up of operations (see Figure 1).
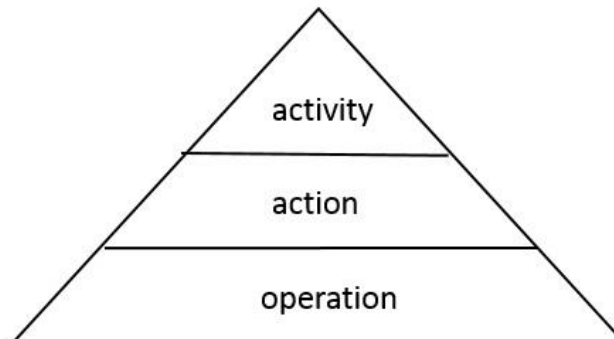
Fig. 1. The Hierarchy of Activity.

An activity is governed by motive(s), which is not necessarily conscious but may become conscious. Actions are governed by goals and are conscious. Operations are governed by conditions, and are conscious during learning but can become unconscious or automatic in routine [15, 16]. An example is driving a car from place A to place B. The activity is that the subject drives the car with the motive of reaching place B. The subject is conscious of their tool (a car) and destination. The activity contains many actions such as waiting at an intersection, merging onto a highway, and turning left/right. Actions like these have clear goals where the subject knows what they want to achieve. An action includes operations such as controlling the steering wheel, observing the traffic, and pushing the gas pedal or the brake pedal. For an experienced driver, these operations are often accomplished unconsciously and sometimes simultaneously.

The hierarchy is also dynamic in that activity, action, and operation can become one another as conditions change. For example, a novice driver might pay careful attention to the steering wheel in order to keep the car moving in a straight line. In this case, controlling the steering wheel is an activity. However, such activity might transform into an operation while the driver becomes more experienced through learning. An operation may become an action or an activity as well. For example, even an experienced driver may pay more attention to how they press the brake pedal when the braking system produces unusual noise.

From the perspective of activity theory, much research on the use of social media concerns the *activity* level in *online contexts*, where people are driven by a variety of clear motivations. For instance, previous work has examined information needs and networking [17, 18], or use of social media for particular purposes such as to advocate for racial equality [19], to show support and solidarity [20], to seek diverse political information [5], and to learn [21].

3   Methodology

32 semi-structured, open-ended interviews were conducted with mainland Chinese citizens between April 2014 and January 2016. Informants included 19 males and 13

females between the ages of 18 and 46, with an average of 29. They had varying occupations including student, government employee, editor, journalist, programmer, and engineer. All of them had lived in mainland China by the time of this study.

Informants reported using social media on a regular basis. The social media services they frequented included, but were not limited to, WeChat, a mobile instant messenger, Weibo, China's largest microblogging service, and Tianya, one of the most popular Chinese online forums. They had at least two years of experience using social media for communication with friends and family, entertainment, or news consumption. The informants were selected randomly and recruited through direct contact on Weibo. There was no monetary compensation for informants. Interviews were conducted in Mandarin Chinese and mostly lasted between 30 minutes and one hour. The author, a native Chinese speaker, conducted and transcribed the interviews and translated them into English.

The interviews were started with general questions such as whether they owned a smartphone or a personal computer, when they first used social media, what platform they first used, what they expected to obtain from social media, and whether they thought they benefited from social media use. Next, informants were asked to list scenarios in which they usually used social media, and their motives and rationales behind such use. The interviewer also asked them if other artifacts were used while they interacted with social media.

The author used the initial understanding to code the data through an open coding process [22]. The initial codes generated concerned activities that informants performed with the use of social media. From there, the author sorted the codes based on the offline contexts of social media use in relation to these activities. The author then used an axial coding process [22] to refine codes that mapped social media use operation, action, and activity. The paper only reports social media use at the levels of **operations** and **actions**, where informants paid considerable attention to their offline contexts. The study did not found strong evidence in which informants' accounts of their **activities** on social media were related to their offline contexts.

Because of informants' diverse backgrounds, they have different habits and usage with social media. The oldest informant at the age of 46, for instance, rarely used social media as operation or action. He usually accessed social media on his laptop and stayed concentrated on reading social media updates. However, this paper focuses on the commondalities among informants' use of social media that was related to offline contexts.

4 Findings

4.1 Routinized Social Media Use as Operation

This study found many accounts where informants treated their use of social media as peripheral to their primary concern or attention. Social media use thus appeared to be operations or actions. For example, informants reported that reading social media was a habit that was often coupled with other primary activities. For instance, Lei, a

21-year-old male college student, said that "*I often check news on Weibo [China's largest micro-blogging service], particularly when I eat meals alone at those canteens on campus, with a pair of chopsticks in my right hand and my phone in the left hand. I only needed my left thumb to swipe to read more news.*" In this example, Lei's social media use became an operation situated in an offline context where Lei managed his meal, his chopsticks, as well as other elements.

While Lei's social media use was combined with the main activity of eating meals, Yuan, a 32-year-old female news editor, described another offline context where social media use was secondary to her main activity of working on her laptop. She told us that "*I put my iPhone aside my laptop while I am working. The phone faces up so that I get to know the latest information.*" In her account, Yuan described an online physical context, highlighting several key elements including the physical proximity between her phone and laptop, as well as the specific way she placed her phone (to face up).

Similar to Lei and Yuan, a few more informants described scenarios where they interacted with social media while engaging in other major activities situated in offline contexts that required their immense attention such as watching television shows or even driving a car.

Their interaction with social media was not planned with a clear, clearly defined purpose, but in a spontaneous way. For example, Lei explained that "*I browse through hundreds of Weibo news of all sorts, ranging from military to politics to entertainment. It feels more like a habit now. If I don't do it, I feel I have missed something. But I'm not really looking for any specific information. I can't remember most of what I have read either.*" Here Lei's description of how he "browses" on Weibo matches the definition of operation where such interaction is automatic, routinized, and unconscious.

Yuan's explanation echoed Lei's response. She said that "*My phone's screen turns on when new information comes in, such as a private message from my friend. I will notice it when I'm working on my laptop. I see what my friend says. But sometimes I'm too busy to react to it immediately, and totally forget it later.*" In Yuan's account, her work was an activity in which social media use was an operation. Social media was part of her working conditions and habits, and social media use was subject to the working context. If Yuan was absorbed in work, she would have little attention on social media.

Informants also mentioned how their own physiological conditions influenced their social media use and turned conscious use of social media into unconscious operations. Rong, a 31-year-old female designer, explained, "*Some days I was so tired especially after working overtime. After I was off from work, when I was sitting in a bus I still tried to read things on forums. But I was between falling asleep and seeing the words without comprehending them.*" Here Rong indicated a state of declined consciousness as she was tired and exhausted. Physically she was still able to hold her phone and use her eyes to see social media content. However, mentally she was unable to concentrate on comprehending words.

In the stories of Lei, Yuan, and Rong, reading social media in particular offline contexts was highly habitual to the point that such social media use became automatic

and unconscious and routinized as operations. It is important to note that social media design, and together with smartphone design, was intended to minimize the effort of humans to interact with technology. In Lei's case, one left thumb was sufficient to operate on his smartphone for more content. In Yuan's case, her phone automatically turns up with minimum human effort. In Rong's example, operating on her phone to load online forums also required little mental effort.

The routinization of these basic interactions gradually took place as informants became familiar with social media platforms. The routinization also allows they to distribute more mental effort to their offline context.

4.2   Arranged Social Media Use as Action

This study found instances where the use of social media had clear goals but were not their primary activity. such use was considered as action. Informants talked about how certain offline contexts demanded their conscious use of social media to be combined with other actions to satisfy a need. For instance, Rong told us that "*I have followed many great graphic designers and photographers. I enjoy reading their microblogs to kill time while I'm commuting in a bus between home and work...I can't pay full attention to my phone. The bus is often crowded and I need to prevent my purse from being snatched. I'll also need to stay alert of unoccupied seats*." For Rong, reading social media is part of the activity of commuting. The goal is to "kill time" but she also pays attention to physical surroundings such as empty seats.

Many informants also mentioned how social media use was situated in their social activities. Wan, a 31-year-old male engineer, shared with us a situation where he used social media while paying attention to his offline social context. He told us that "*When friends and I dine out, many of us are staring at our phones while waiting for the food to be served. I like reading posts on Tianya and Zhihu. Because it feels awkward if we do not have much to say and just stare at each other. But we do chat with each other and sometimes show each other interesting stuff we come across on social media*." Tianya is a popular online forum in China, while Zhihu is a Chinese Q&A website. Similar to Wan, Ling, a 26-year-old male graduate student, said that "*My friends and I use WeChat a lot when we play board games. We send pictures of cards in hands to allies to 'cheat.' Of course others know. Sometimes we take pictures of interesting combinations of cards and share these pictures in WeChat's group chat and laugh together*." Wan and Ling's stories point to offline social contexts in which they gathered with friends with the motive of socializing and having fun together. Their action of using social media was an essential component of the social contexts to avoid certain social awkwardness, to stimulate conversations around newfound content, and to communicate.

Another informant shared an experience where social media use incompatible with offline social contexts caused problems. Zhe, a 37-year-old male writer, told us, "*My wife likes to take pictures of food and share them on WeChat before I can eat. Usually I'm okay with it. But there was one time she changed too many angles only to shoot the best photos and I became really impatient. We ended up having an argument*." In Zhe's account, the action of taking pictures of food has been established by him and

his wife a component of the social activity of having meals. But such action might become inappropriate when his wife focused all her attention onto taking a satisfactory picture, ignoring other social factors such as her waiting husband.

Social media actions were part of larger activities such as the commuting activity of Rong, the socializing activities of Wan and Ling, and the eating activities of Zhe's wife. In these instances, social media use was not at the center of those larger activities, but played a meaningful role nonetheless.

5   Discussion

In this paper, social media use was analyzed at the two basic levels of activity, each indicating a distinct degree of consciousness involved in knowing social media and making decisions about how to use social media in certain offline contexts. The study shows that many types of social media use might take place while people pay more attention to their offline contexts. Next the paper discusses situated social media use and derives implications for social media design.

5.1   Situated Social Media Use

The findings included many instances in which informants used social media during a variety of activities where the major motives were neither consuming social media content nor creating content on social media. To understand such social media interaction, it is important to pay attention to the specific context in which social media use is enacted. For instance, a person's physical surroundings might be a dominant factor if he or she is reading social media updates while commuting in a crowded bus. The social context matters if a person uses social media when collocated with friends and family. Local cultural factors such as etiquettes might also impact certain social media behaviors. Similarly, Mark et al. showed how the Iraqi culture might influence local citizens' trust and information seeking through social media [23]. When a person interacts with a rich context where physical conditions, norms, social relationships come into play, social media is not the core artifact that demands attention. The findings echo Skatova et al's study [24] of office workers whose use of technology mediated their breaks during their working time. Social media research might attend to these different contexts by incorporating external data sources and triangulating heterogeneous types of data. For example, it might be useful to know through what device people are using social media. Compared to laptops, mobile devices such as tablet and smartphone are more likely to indicate lower consciousness in social media, because people often need to pay attention to other physical conditions. As a result, their interactions with social media, such as liking or re-tweeting, might be less calculated and more improvisational.

Informants often mentioned whether they paid attention to their social media, and how much. Attention is a limited resource that users consciously spend in interpretation of their context and corresponding behavior. Attention also bubbles up or trickles down according to users' shifting conditions and reaction to their context.

Rong, for instance, could be either tired or not, which deeply influenced how much attention she had on social media, and how meaningful her social media interaction was to herself. Existing HCI research has concerned multi-tasking at workplace [25]. Similarly in social media research, it is worth attention that even for the same person, his or her social media use might contain varied meanings at different times and locations. Future social media research might pay more attention to individual social media users' behavioral patterns, instead of treating the social media population as a homogeneous one.

5.2   Implications for Social Media Design

This study shows that offline contexts, user consciousness, and social media design are intricately related, and sometimes at odds. On the one hand, guided by usability principles, the goal of design is to make interactions on social media simple and easy to use. Driven by a commercial agenda, design is inclined to prolong user stickiness, and encourage user participation. Consequently, the goal of design seems to be weakening users' consciousness, making the behavior of creating clicks, likes, and posts on social media faster and more automatic, and in doing so engaging users in the online contexts. On the other hand, users often have to attend to their offline social and physical contexts. Social media use becomes part of their social or cultural practices to the point that users do not need reasoning processes to carry out certain interactions with social media.

Offline contexts can be leveraged in social media design to create more contextualized experiences, such as contextualized social media updates. For example, if users are browsing social media updates as an operation while engaging in other major activities, they are less likely to have sufficient attention or cognitive capacity for comprehending complicated ideas such as an academic argument, compared to news. Social media might automatically balance the volume of different types of content, attending to users' focus and attention.

6   Conclusion

The paper reported a small-scale interview study of how offline context factors into social media use. Although activity has three levels, this paper only reported the two basic levels, *operations* and *actions*. The study found that informants' accounts of social media use at these two levels sufficiently illustrates the relationship between offline context and social media use. Social media might not be the central artifact in these activities as people consciously reacted to their offline social and physical context. Future social media research needs to pay attention to the influence of offline contexts while analyzing large-scale social media data. Finally implications for social media design were discussed.

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