Cyber Social Interactions: Information Behavior in Between Social and Parasocial Interactions

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ABSTRACT

Participants in real-time online sessions, be it (business) meetings, virtual school lessons, or social live streams, all engage in cyber social interactions. Unlike parasocial interactions, cyber social interactions are characterized by reciprocity and temporal proximity. In contrast to social interactions, they lack spatial proximity and bodily contact. This is a fairly new concept in information science that rose from technological advances and unprecedented circumstances (e.g., the rise of digital economy and knowledge workers being able to work remotely or, more recently, global lockdowns and contact restrictions). As a result, the past ways of working and socializing were transformed by making them, in some cases predominantly, virtual. Regarding the example of social live streaming we exhibit the importance of cyber social interactions for information behavior research. This conceptual article is a plea for information science to engage more in human-human online relations and interactions.

Keywords: information behavior, social live streaming, cyber social interaction, cyber social relation, social interaction, parasocial interaction

1. OFFLINE AND ONLINE HUMAN-HUMAN INFORMATION INTERACTIONS

Studying the behavior of people when interacting with information is one essential aspect of information science. Whenever people actively or passively deal with information, researchers speak of human information interaction and human information behavior (e.g., Wilson, 2000). Even while people interact with each other, a process of information interaction takes place. However, attention was not paid to the differences between the characteristics of particular online human-human information interactions, which should not be confused with human information interactions. In this article, we exclusively focus on offline and online relations between humans. Offline human-human information interaction mainly happens during face-to-face conversations. However, when people watch TV or listen to the radio, they also receive information from other people. Once digital and online media was accepted in our everyday life, the ways of interpersonal interaction changed. It no longer only takes place either physically and in-person (as in social interactions) or through otherwise one-sided information flow (as in parasocial interactions), but now it also happens virtually. Online human-human information interaction is very diverse and includes online web conferences, VoIP calls, watching a stream or online video and, furthermore, chatting or any other form of exchanging messages.

The concepts of "social interactions" and of "parasocial interactions" are widely known in the social sciences and also in information science. A typical example of "social interactions" are face-to-face conversations between two or more people. Fundamental characteristics of face-to-face communication and, therefore, of social interactions are bodily contact, proximity, facial expressions, eye movement, gestures, and orientation, as well as verbal and non-verbal aspects of communication (Argyle, 1969). Considering mediated contexts, audience members may establish some kind of relationship towards the "media figure" during consumption of, for instance, movies, TV shows, or social media content. However, the media figure (e.g., streamer, TV show moderator, or another celebrity) is not (or not always) aware of this relationship. Horton and Wohl (1956) describe such mediated interactions as "parasocial interactions." Some studies apply the term parasocial interaction in the context of live streaming services or real-time online events (like webinars or online meetings) to describe the information behavior of their participants. Is this classification actually correct? Our studies indicate

a clear "no" (see, e.g., Fietkiewicz, 2019, 2020; Fietkiewicz & Scheibe, 2017; Fietkiewicz & Stock, 2019; Fietkiewicz & Zimmer, 2020; Fietkiewicz et al., 2018, 2021; Friedländer, 2017a, 2017b; Gros et al., 2017, 2018; Honka et al., 2015; Scheibe, 2018; Scheibe & Zimmer, 2019a, 2019b; Scheibe et al., 2016, 2022; Zimmer, 2018; Zimmer et al., 2017, 2018, 2020, 2022; Zimmer & Scheibe, 2019). Describing such online interaction as "parasocial" signals a misunderstanding of the concept of parasociality (Giles, 2010). Kowert and Daniel (2021) speak of a "one-and-a-half sided parasocial relationship," but for our understanding it is no parasocial relation at all, as it does not match the characteristics of parasocial relations. The crucial difference between social interactions and parasocial interactions is the lack of reciprocity, of bodily contact, and of temporal proximity, leading to the establishing of "intimacy at a distance" (Horton & Wohl, 1956, p. 215).

Interpersonal interactions on live streaming services or during online meetings or online schooling are neither social interactions (as there is no spatial proximity and no bodily contact) nor parasocial interactions (as there is reciprocity and temporal proximity). There indeed exists a different form of human-human interaction, which we like to name "cyber social interaction." Cyber social interactions as real-time interactions in the technological world (Lanzara, 2015) or in cyber-spaces (Çakir, 2015) occupy an intermediate position between social and parasocial interactions. With the increasing importance and prevalence of this type of interaction, real-time digital environments occupy an exceptional position in the entire landscape of social media and other web-based tools (Scheibe et al., 2022; Zimmer et al., 2018) (see Fig. 1). In this brief article, we introduce and discuss the novel approaches of cyber social interactions and cyber social relations in the context of information science, especially in information behavior research.
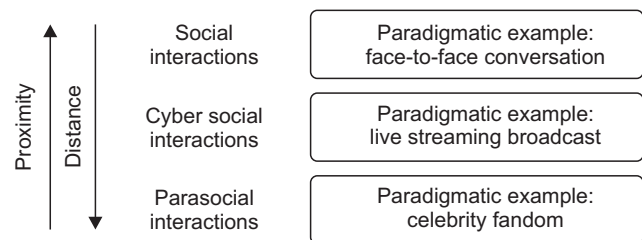

Fig. 1. Interpersonal interactions.

2. CYBER SOCIAL INTERACTIONS AND CYBER SOCIAL RELATIONS

Cyber social interactions need to be distinguished from cyber social relations; however, both fall under cyber social behavior (McLaughlin & Wohn, 2021). Interactions are concrete interpersonal contacts in (cyber-) space and time, e.g., chatting with a live-streamer or with other viewers on a live streaming platform such as, for instance, Twitch, or answering participants' questions during a webinar. Relations are constant over a certain period of time, e.g., subscribing to a streamer and viewing his or her broadcasts because of a positive experience with presented content or interaction in the past. We find social relations (and interactions) between teachers and their students, or between colleagues in a company, but when it comes to remote schooling and online business meetings, they become cyber social interactions, which can be very diverse: Some participants turn off their cameras and others do not, some are distracted by other activities, some are concerned about privacy, and while some finally feel confident to speak out, others use this as an opportunity to stay on the sidelines and refrain from active participation.

The boundaries between the three concepts of social, cyber social, and parasocial interactions are not exact but rather open and blurred. We find increasing (temporal and spatial) proximity on the way from parasocial to social interactions, and on the opposite side the distance increases when changing from social to parasocial interactions. For instance, people with pre-existing social relations who now interact online are participating in cyber social interactions, but their behavior is also near to social interaction (Mesch & Talmud, 2006). It is possible that people who have known each other, and others who did not meet online, form new virtual communities (Chen et al., 2014; Cheung et al., 2015) as a result of their cyber social interactions. However, when we communicate with new colleagues during an online meeting (as is not seldom in the time of COVID-19), it is at the very center of cyber social interactions. We found similarly clear cyber social interactions on social live streaming services when it comes to communication with, probably unknown, users from the audience (Chen & Lin, 2018). But if we observe the cyber social interactions of viewers with prominent streamers, these interactions are close to parasocial interaction. Finally, if one observes and reads the posts of a celebrity on, for instance, Instagram, and he or she is a fan of the celebrity, it is clear one-sided parasocial interaction. If our fan comments on a post of the celebrity and

the celebrity actually answers, we cross the boundary from parasocial to cyber social interactions, as reciprocity is now present in cyber-space.

Scales for measuring the extent of parasocial interactions already exist (Dibble et al., 2016; Rubin et al., 1985). It is necessary to establish similar scales for cyber social interactions as well. Further, we should empirically study this kind of behavior, more specifically people's online information behavior during real-time events. What are the differences between social and purely cyber social relations, and what differentiates parasocial and cyber social interactions?

3. CYBER SOCIAL INTERACTIONS ON LIVE STREAMING SERVICES

Live streaming platforms are a paradigmatic example for cyber social relationships (Fig. 1), as they are enabler for social actions and cyber social interactions, on which the two actor groups of streamers and viewers meet (Fig. 2). Live streaming services are social media with the following characteristics (Scheibe et al., 2016):

- they are synchronous,
- users are able to broadcast real-time content,
- mobile devices (e.g., smartphones, tablets) or computers with webcams are used for broadcasting,
- audience members are able to interact with the broadcaster and with other members of the audience via chat messages, and
- audience members can reward performers with, e.g., virtual gifts or by tipping money.

We differentiate between four kinds of live streaming services:
- general social live streaming services (without any thematic limitation; everyone may broadcast), e.g., YouNow or IBM Watson Media (formerly Ustream),
- live streaming services for selected broadcasting users, e.g., V LIVE for Korean artists (Askeridis & Ilhan, 2019),
- embedded services (as parts of other social media platforms), e.g., YouTube Live, Instagram Live, or Facebook Live, and
- topic-specific live streaming services, e.g., Twitch (mainly e-sports and digital games), Chaturbate (nudity and sexual activity), or Taobao Live (e-commerce in relation to Alibaba).
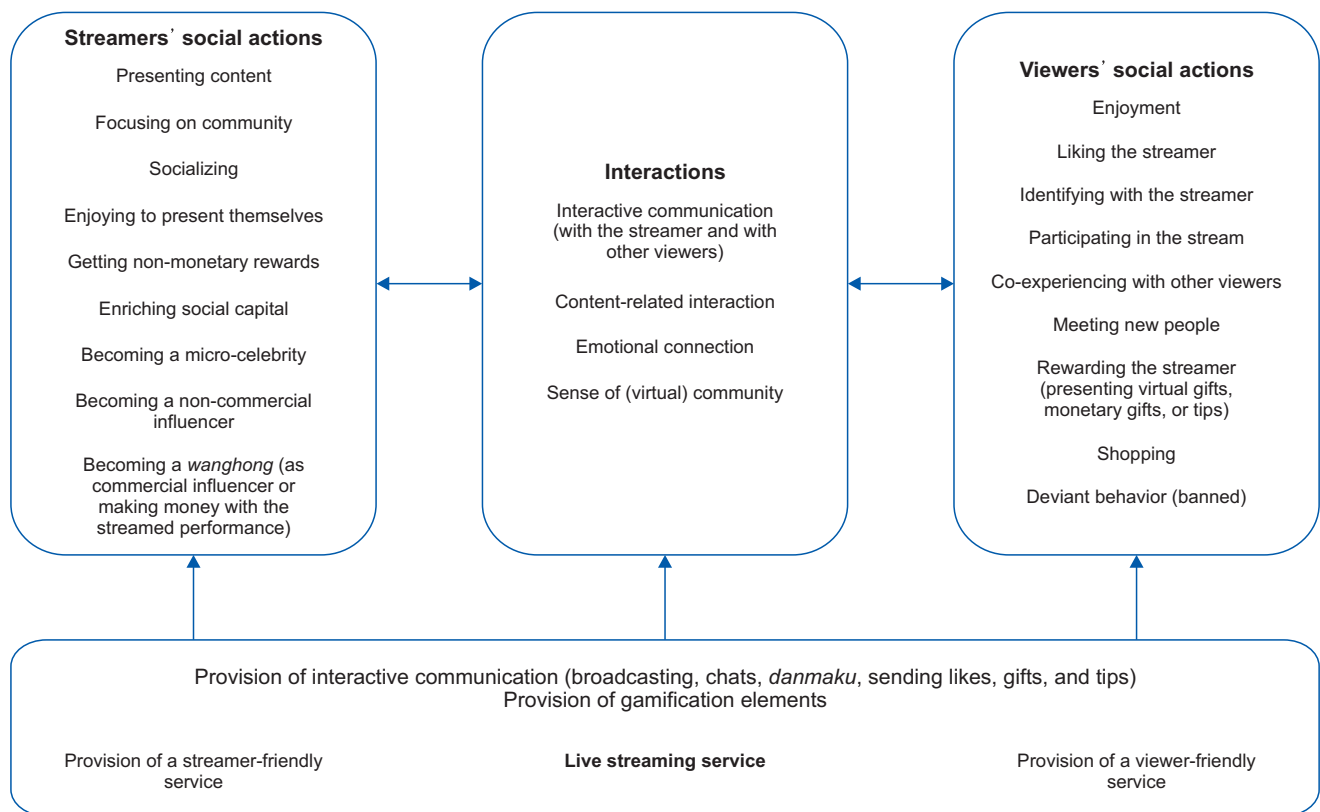
Fig. 2. Streamers' and viewers' cyber social actions on live streaming services (*Source:* Scheibe et al., 2022).

In the following paragraph, we report on findings of a systematic review on live streaming (for details and literature references see Scheibe et al., 2022).

Broadcasters' information behavior and social actions depend on the service. Streamers behave differently on, for example, Twitch, YouNow, Chaturbate, or Taobao Live. Therefore, streamers on different platforms perform different social actions and have different influences on their audience members. On Twitch, streamers report about, for instance, e-sports events (e.g., European Sports League), comment on (their own) video game playing, or simply chat with the audience. Most streamers present themselves with the help of a camera and speak to their audience with a microphone, while their screen is shown as an overlay while streaming the played game or commented event on an additional screen. Various notifications are displayed across the presentation of a stream, such as chat messages, mentions of top donors, additional donation and subscriber notifications, and sometimes banners of sponsors. Broadcasters of general live streaming services, like YouNow, stream a broad variety of content. Some, for instance, chat and share information with their audience and others make music or

dancing. Sometimes streamers fulfill the communicated desire of their audience and adapt their streamed content to the audiences' wishes. Chaturbate is a topic-specific platform for sexual and nudity related content. Streamers provide sexual performances for their audiences. In the categories of women, men, couples, and trans they act as webcam models and flirt with audience members, do a striptease, or have sex in front of the cam. Some models use a professional studio for their broadcasting. Interaction between viewers and streamers may happen through chat messages and also remote-controlled vibrators. On shopping-related e-commerce live streaming platforms, e.g., Alibaba's Taobao Live, streamers get paid by audience members, by companies, or they receive a share of the profits by streaming product-related content. Streamers, for example, answer viewers' questions about the products and demonstrate the products' functions to encourage the purchase intentions of potential customers.

Streamers are community-focused as well as content-focused and they are motivated by and interested in non-monetary and monetary outcomes. Acting community-focused and communicating actively with their audience supports higher non-monetary outcomes, like audience

engagement, and results in lower monetary outcomes, like donations, on Twitch. The majority of streamers on general live streaming services (e.g., YouNow) are motivated to broadcast live for fun and to overcome boredom as well as to get in contact with other people. About 10% of streamers even stream because they hope to become an influencer and micro-celebrity. In order to receive the audience's attention, for streamers on Chaturbate it is about creating authenticity, i.e. the authentic interaction of content (e.g., striptease) and the model's personality. Broadcasters on e-commerce live streaming platforms (like Taobao Live) are mainly interested in earning money as digital entrepreneurs or *wanghongs* (wǎng luò hóng rén; 网络红人; Chinese for "people who have gone viral on the Internet"). For them, the main motive is to create social attraction and live streaming mediated interaction.

For many streamers, broadcasting starts as a hobby. They begin as amateurs and some gain social capital and develop a fan base, leading to a hybrid form of work and play. A certain level of social recognition and social capital is necessary for streamers to be able to monetize their actions and streamed content. Especially for video game streamers who started early with the release of Twitch, the situation was very promising to become a micro-celebrity. Some professional streamers make their money through donations and tips (many broadcasters on Twitch and nearly all on Chaturbate) and some act as influencers – they cooperate with companies and other institutions. One may distinguish between unpaid influencers, who influence their audience, for example, in terms of environmental protection, and paid influencers who work with a company to draw viewers' attention to a particular product. Many of them can be found as *wanghongs* on live streaming platforms which are linked to e-commerce services such as Taobao Live. However, all cyber social actions performed by streamers, regardless of their specific motives, are targeted at the interactions with their audience.

How do viewers perceive the cyber social relations on live streaming services? What are their main motives for watching and spending time on such services? What information behaviors do viewers of social live streaming services have? What social actions do audience members perform? Watching live streams makes users happy and relieves stress. Moreover, viewers of live streams are attracted to the streamer's charisma and sometimes develop an emotional attachment to micro-celebrities. Liking the streamer, combined with interactivity as well as viewers' identification with the streamer, predicts the use of game

related live streaming services. Viewers' social actions on live streaming platforms are mainly driven and motivated by their enjoyment. Watching and interacting in live streams can even help viewers to cope with difficult periods in their lives such as, e.g., mental health issues or conflicts at work and in school. In addition to social interaction, the sense of community and meeting new people motivate users to engage with other users during live streams. For some users even the lack of external support in real life is a motivation to watch live streams and to "escape reality." Sometimes deviant behavior by viewers and streamers, such as abusive behavior or solicitation of unwanted sexual acts, also results in deviant relationships, normally leading to the banning of these users.

Some audience members like to participate actively in a stream and show engagement. Possibilities for viewers to participate are very diverse on live streaming services. One can chat with other audience members and with the streamer, viewers can become a guest in a streamer's broadcast and stream with the streamer via a split screen, and one can donate a subscription to other viewers and reward the streamer with virtual gifts. Receiving rewards, for example through likes, donations, or (money-based) gifts, is essential for streamers on live streaming platforms. However, what are the incentives and motives of viewers to donate rewards which require being paid with money? Gifting rewards is an important aspect to support the streamer as well as to acknowledge the streamer's performance. Users can support a streamer by giving (non-monetary) gifts (e.g., likes, hearts), gifting money (donations or subscriptions), or paying ("tipping") streamers for desired actions (e.g., taking off a bra on Chaturbate). Supporting a streamer therefore satisfies the needs of social integrative motivated viewers.

Almost all viewers on general social live streaming services have a desire to reward streamers with special emoticons, which are virtual gifts. Especially on Twitch, viewers who are motivated by social interaction and are spending money use the service to be part of the community, to communicate with other users, and furthermore, to support the streamer. Virtual crowd and community experience, viewer-streamer interaction, and cognitive absorption (being deeply involved in using the service), influence audience members' purchase intention and are the main motives to purchase virtual gifts. Similar effects like cognitive absorption occur by experiencing flow. There seems to be a relation between sending gifts and *danmaku*, which is a kind of comment that runs across the screen (if implemented in the system). Additionally,

broadcasters' reciprocal actions have motivating effects on the viewers. Viewers send (sometimes expensive) gifts, by spending a huge amount of money, to attract the attention of the streamer and sometimes the audience, or to promote preferred stream content. So, gift giving depends on the sense of community and therefore both the viewer's relationship with the streamer and with other audience members. The more engaged viewers are with the broadcast or platform, the more likely they are to donate gifts. It should also be remembered that the viewer's sense of happiness influences the crowd's intention to donate; viewers are paying for entertainment.

The continuous viewing intentions of users lead to "stickiness" towards a specific service, show, or an individual performer. What drives the stickiness of viewers? The loyalty of users to streamers presupposes the loyalty of broadcasters to the service. Gratifications as sociability and entertainment are necessary for loyalty of viewers. In this regard, immediate feedback of users is important for the perception of media richness. Furthermore, platform attachment as well as emotional attachment towards streamers foster user stickiness. Identifying oneself with the broadcaster and the streamed content as well as emotional engagement indirectly have effects on behavioral loyalty; however, this is moderated through the intensity of interpersonal relations.

Many live streaming services provide gamification elements to support streamers' as well as viewers' motivation to continuously stream and watch content, respectively. Among other mechanics, one can find different kinds of points, levels, badges, leaderboards, and also gifts. On most live streaming services users can spend money to buy the service's virtual currency and furthermore virtual gifts for streamers. Particularly, Chinese live streaming platforms provide a great variety of game mechanics (e.g., Longzhu.com).

4. MICRO-CELEBRITIES AND *WANGHONGS*: INFORMATION BEHAVIOR OF INFLUENCERS AND STREAMERS

We now turn to the economic perspective and the opportunity of monetizing parasocial and cyber social relations (Stock, 2020). If successful, information producers with distinct relations are (1) influencers (monetizing their parasocial relationships), (2) live-streamers (monetizing their cyber social relationships), or (3) both. For Khamis et al. (2017), such persons are "micro-celebrities." If a person has many followers on social media services

and great follower interaction, the person may cooperate with companies and make advertised posts. Successful persons may become influencers or affiliate partners and monetize their online reach and parasocial relations (Freberg et al., 2011). Influencers can be found in many parts of the Internet; they predominantly apply, for instance, YouTube, TikTok, Instagram, and Twitter.

On live streaming platforms, there is a further monetization possibility apart from the affiliate marketing. If a person has many subscribers or casual viewers during their live streaming performances (for instance, on Twitch, Chaturbate, or YouNow) they can make money with paid subscriptions and tips (Törhönen et al., 2019, 2021).

Besides influencers and live-streamers, there is also a third category of micro-celebrities, who can profit from both monetization opportunities. Those micro-celebrities act as influencers on live streaming platforms and combine their parasocial and cyber social relations (Ma, 2021). Especially in China and South-East Asia, shopping via live streaming services is popular. At first sight, it is similar to TV shopping channels; however, it is much more interactive. There are two groups of motivations for customers to view live streaming services for shopping, namely product-related and streamer-related motives. There seems to be evidence that the mediating role of the broadcasters as micro-celebrities is essential for viewers' purchase intentions, thus forming a web celebrity economy. A prominent example is Alibaba's live streaming service Taobao Live, where streamers present products to be sold in e-commerce. This way the streamer ends up with two sources of income—the affiliate commission (payments from the advertising companies or brands) and tips from the satisfied audience. Influencers and streamers (and combinations of both) as well as their parasocial and cyber social relations constitute the latest form of Internet-based economy, worth billions of dollars, called *wanghong* (Craig et al., 2021), particularly in China (Han, 2021).

5. CONCLUSION

The concept of "cyber social interactions" is becoming increasingly important these days. Especially with live streaming and video meetings and conversations, the terms "social interaction" and "parasocial interaction" fail to describe the novel behavioral traits. The time has come for information science, especially for the "important area" of information behavior research (Willson et al., 2022), to give the concept of "cyber social interactions" the attention

it deserves. Information behavior is much more than information seeking behavior and includes all human activities of information production, information seeking, and information reception (Fisher et al., 2005, p. xix), be it as human-computer interaction or as human-human interaction in cyber-space. Now we have the possibility to explore human information behavior in a novel context and witness its development, for better or for worse. Our conceptual paper is a plea to engage more in human-human online relations and interactions not only in sociology, economics and business administration, and communication science, but also in information science.

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CONFLICTS OF INTEREST

No potential conflict of interest relevant to this article was reported.

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