Editorial for the special issue

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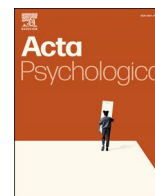
Editorial

Editorial for the special issue: Social Influence in Computer-mediated Communication

1. Introduction

The constant growth of computer-mediated communication (CMC) and the accompanying rise of novel technological affordances has fueled the emergence of new research questions that focus on changes in both the character and the reach of social influence. Social influence in CMC emerges in this special issue as a process with multiple outcomes - cognitive, emotional and behavioral - and operating on several levels. At the interpersonal level, mediated communication between dyads can potentially transform the social processes that are key to social influence, such as individual engagement, or the ability to act diplomatically. Beyond this, online environments have transformed social influence from these small-scale interpersonal settings and have seen the establishment of platforms that allow for influence to spread within mass audiences in a multitude of ways, with individual users turning simultaneously into the source and recipient of influence. Further, beyond influence among individual humans, virtual agents can now act as a source of social influence, inspiring several studies to delineate their potential uses and misuses. In all these instances, online technologies continue to evolve in their functionality. New technologies offer us an ever increasing catalog of social-interactive behaviors, that is, new affordances for exerting and responding to influences from others.

The present editorial outlines six overarching themes that come to the fore in this special issue on "Social Influence in Computer-mediated Communication", and it describes how specific articles contribute to the current understanding of these themes. It also provides methodological considerations for studying social influence in online settings, and ends by pointing towards future directions for research. The first theme calls into question the evil reputation of the internet, by pointing out both the threats and power of online social influence, and leads towards the second theme of the role of affordances: the medium-specific possibilities that enable, restrict, or transform social influence. This second theme is discussed in two sections, focusing on either the change in affordances for social influence when dyadic or small-group communication is transformed to an online setting, versus the affordances presented by social media, that enable the reaching out to large audiences. A third theme revolves around the content of social influence online, and specifically how it can be used to spread both positive and negative ideologies, stereotypes and norms. The fourth theme discusses how the introduction of CMC may have contributed to the dynamics of changing social structures, in particular a change in those attributes that characterize a position of influence and power. Finally, the fifth and sixth themes examine the persuasiveness of online messages, and compare virtual and human agents in terms of type and strength of persuasion.

2. First theme: is there an evil internet?

Following popular discourse, the internet and CMC have often been blamed for harmful phenomena such as antisocial behavior like trolling and bullying, the spreading of misinformation, and societal polarization (Lea & Spears, 1991; Settle, 2018; Slonje et al., 2013; Tucker et al., 2018). Researchers have supported such assumptions about the internet by pointing at the anonymity of many online platforms, which makes individuals less accountable for their actions (Kiesler et al., 1984; Lapidot-Lefler & Barak, 2012; Suler, 2004), or at the rapidity with which false information can spread through online networks (Zhang & Ghorbani, 2020), or at the algorithms which reinforce one-sided views by circulating information in so-called 'filter-bubbles' (Del Vicario et al., 2016).

In the current special issue, a more nuanced view on CMC is presented by Brown et al. (2022). They stress that continued use of the label "the internet", as a single, broad, and ill-defined entity, and its use as a synonym for CMC, contributes to our misunderstanding of the impact of CMC technologies on social influence. In line with this, the other articles in this special issue show that CMC offers multiple pathways for social influence, fostering or disrupting social connection. For example, Lüders et al. (2022) and O'Reilly et al. (2022) suggest that affordances posed by CMC can connect individuals with shared social identities and thereby promote collective actions. This is illustrated by Rovira-Sancho and Morales-i-Gras (2022) following the spread of feminist hashtags in their work. On the downside, Roos et al. (2022) and Binder (2023) demonstrate that technological affordances may limit participant's ability to act diplomatically, or persuasively, in dyadic CMC compared to face-to-face interactions, which may increase the risk of misunderstanding and polarization of opinions. Moreover, CMC can be used to reinforce well-established ideologies, as illustrated by Verniers et al. (2022) showing the influence of mommy blogs in perpetuating an intensive mothering ideology. Therefore, this special issue stresses the need to refine CMC affordances and consider their impact on social interactions, something addressed in detail by the second theme.

3. Second theme: the role of affordances

3.1. Affordances in dyadic and small-group interactions

It is clear, then, that CMC can produce both "bad" and "good" social-interactive outcomes. To understand and predict what outcomes occur, it seems imperative to know what happens on a micro-level within mediated interactions: what do people do, how do others react, and how do they attribute and perceive each other's behavior?

Interaction partners' behavior is importantly limited by the technological context in which they interact. The technology offers certain affordances that might differ from the "regular" context of face-to-face interactions. Roos et al. (2022) propose that to the extent that these affordances enable or disable behaviors that people use to effectively regulate their face-to-face interactions, this can affect whether an interaction is successful or unsuccessful. For example, they show how the affordances of text-based CMC might make it more difficult to harmoniously navigate potentially contentious discussions. In face-to-face conversations, people can maintain a positive relationship amidst disagreement by being responsive (nodding, "hmm"-ing) and by speaking ambiguously ("maybe", "I think"). With these behaviors, interaction partners show that they are listening, understand each other's point of view, and take each other's feelings into account. But in text-based online chats, due to the lacking synchronicity and text-based character of conversation, these behaviors are more difficult to enact. This leads people to feel ignored and to experience more conflict and disagreement with one another.

As another example, Binder (2023) stresses the importance of synchronizing body movement in social encounters to facilitate conversational engagement, understanding, and social influence. In many online interactions, this synchronization is less afforded because the (real-time) visibility of bodily movement is reduced and/or the possibility for bodily movement itself is limited. Even for highly similar technologies, or indeed within the same set of communication channels, the specific set-up of devices and displays can affect the extent to which movement, and its visibility, is encouraged or restricted. This could explain why people are often less engaged in online conversations and misunderstand each other more often.

Social-interactive outcomes are not only determined by affordances, however, interaction partner's behaviors are also affected by social expectations and norms. In their paper, Roos et al. (2022) tried to reduce misunderstanding and conflict in chat conversations by offering participants possibilities for being more responsive and ambiguous. But these interventions did not have the desired effect as participants resisted alterations to their behavior. This suggests that through repeated interaction via a mediating technology with certain affordances, people form an impression of what behavior is "normal" and expected in that medium, and try to comply with this medium-specific social norm. Thus, the affordances of technology would interact with what users want or need and the social expectations they perceive in the interaction context. These norms appear to be shaped by affordances, but also shape how affordances affect behavior. This stresses the importance of taking the social context into account when looking at the effects of technological affordances.

3.2. Affordances, wider online networks, and society

The importance of a deeper understanding of the role of affordances is further evident when considering work that is concerned with influence spreading through online social networks and eventually shaping online discourse and identities. An affordance-based perspective on CMC promises to support a psychologically relevant analysis of specific platforms, as much as the internet in general.

As Brown and colleagues argue, the "problem with the internet" stems from a simplified perspective on what is not just "the internet", but a complex landscape of CMC technologies with different functionalities, different levels of appeal to users, and different histories of user practice. For them, a consideration of affordances would constitute one element in a framework that rejects uniform, high-level concepts in favor of a more detailed, and more precise, analysis of the relationship between technology and behavior.

The contribution by Lüders et al. (2022) may be seen as a response to the critique by Brown et al. (2022) and constitutes an example of how an affordance-based approach can be implemented. Lüders et al. (2022) focus on the affordances of social media and develop a theoretical

perspective that draws extensively on the formation of social identity. This allows them to portray processes in which users actively and purposefully exploit functionalities of social media platforms towards shared selfhood.

4. Third theme: content - the positives and negatives of ideologies, stereotypes, and norms

Researchers show an ongoing interest, and oftentimes concern, over the role of CMC in the spread of new and established concepts that fall in the range of ideologies (as sets of interrelated beliefs and attitudes), identities, stereotypes and other normative content. Online influence can act as an accelerator and facilitator for activism, progressive movements and user-level political engagement (e.g., feminist networks) as much as it can provide a pervasive environment for establishing and reinforcing roles (e.g., intensive mothering ideologies). It is crucial to note that in many platforms that have been used as an accelerator of activism, individualized information becomes secondary to the shared social features that represent the collective (Brown et al., 2022; Lüders et al., 2022; Postmes et al., 1998). These social features may take the shape of shared social norms, an ideology, a collective emotion, a social identity, or focus on the stereotypes of other groups.

So how does such ideology or identity take shape? Lüders et al. (2022) describe the online ecosystems within which novel identities are developed as '*recursive dynamic identity systems in which the contextual realities and the social interactions that occur within these realities are mutually constituting each other.*' They explain that group members consensualize on important group characteristics through discussions within groups, while at the same time aim to distinguish themselves from other groups in the wider social context (see also Postmes et al., 2005). A very clear example of this latter process of demarcation is provided in the context of #MeToo, where this popular hashtag was countered by the emergence of a second hashtag #NotAllMen, which in turn provoked #YesAllWomen (Bailey et al., 2019). Related to the interplay between convergence of opinion and identity, O'Reilly et al. (2022) focus on the role of opinion expressions as social cues. They suggest that expressions of opinion are often the only social cues available in online exchanges. In such cases, the awareness of congruent opinions serves as a trigger for group-based identification and, possibly, group-based behavior. As their experiment-based findings suggest, the particular set-up and affordances of an opinion-based online group is likely to determine the level of identification next to behavioral outcomes.

While these between-group interactions are prevalent, the paper by Rovira-Sancho and Morales-i-Gras (2022) demonstrates that most online communication (measured in terms of retweeting) occurs within communities of people with similar geographic or professional profiles. When examining who retweets whom in the context of femitags, clear patterns emerge that distinguish between feminists, journalists and politicians, celebrities, extreme and alt right, Latin American, or Spanish networks. However, the results also suggest that these local communities' influence can spread to other communities, who then tend to *reframe and contextualize* the message or hashtag, to allow different groups to fight a unified battle for a common cause. Although their reasons and aims to join may have diverged (take the examples of movements and social dynamics such as Yellow vests, Gezi park, the Arab Spring and the recent mobilization for Women in Iran), their collective umbrella empowered them to threaten, or turn over, the existing status quo (see also Thomas et al., 2012).

Somewhat opposing the idea that online groups and networks act as an accelerator of social *change*, the paper by Verniers et al. (2022) explains that online communication can also be a powerful source for maintaining and perpetuating existing ideologies. By carefully analyzing the emotional and ideological content of so-called mommy blogs in France, they show how these blogs serve to reinforce gendered emotional patterns and provide a platform for the diffusion and

strengthening of what they term an *intensive mothering ideology*, an ideology that is intrinsically linked to the justification of gender differences in child-rearing in society.

What would make the online medium of blogs specifically powerful in maintaining such ideologies? For one, women who blog actively about their everyday motherhood experiences are typically women for whom a motherhood identity is very central (Morrison, 2010). They tend to have more strongly outlined ideas about what motherhood should look like than those who consult mommy blogs more passively, i. e., who typically visit these blogs to seek information and advice about parenting or explore different family perspectives. This is in stark contrast to the everyday experience of seeking advice, which is typically with inner circles of friends or trained professionals. The blogs, then, serve as echo chambers which, while being the most popular blogs on parenting on the internet, only provide a limited number of viewpoints.

This view is interesting when we contrast it to the general assumption that in online environments, every single individual can say what they want to say, because of their anonymity and lack of accountability (e.g., Suler, 2004). It appears that, even online, certain views - be they arguing for change, or reinforcing the status quo - can take the upper hand at the cost of a more reliable representation of the plurality of views that may exist in society (cf. spiral of silence, Noelle-Neumann, 1974).

5. Fourth theme: changing social structures?

Given the prominence of ideological debate online, the ongoing challenge and consolidation of stereotypes in online networks and communities, and the potential for technology to channel and shape communication, an emergent question is to what extent CMC contributes to a change of social structure, at least in the online world. Traditionally, a source of influence can be conceptualized as an individual, or group of individuals, in some position of power, and this position to be characterized by, for example, high social standing, established reputation, control over information and communication, and so forth (Tedeschi, 1972). With new means of communication, however, come new ways of reaching and maintaining powerful, or influential, positions. While issues of causality remain elusive and cannot be resolved here, there are several observations across the present contributions that demonstrate how CMC coincides with distributions of social influence that are comparatively novel and have no direct equivalent in offline structures.

Where online influence is mostly unidirectional, this often does not rely on established status hierarchies. Instead, inspirational, often relatable online actors reach out to large audiences in their role as influencers. Balaban et al. (2022), by focusing on an actual influencer's audience, address the commercial aspects of this newly evolved economic model and the role of para-social relationships. While para-social relationships are expected to be the main mechanism that binds influencer and followers together, this study finds notable exceptions to the rule, pointing instead at a more complex interplay of moderating factors, such as followers' product involvement. Similarly, mutual social influence with little centralized leadership or core actors is the main finding by Rovira-Sancho and Morales-i-Gras (2022) in their analysis of three feminist hashtags on Twitter in the Spanish-speaking world. Although related to considerable mobilization and thereby to successful activism, all three cases are marked by a horizontal leadership structure. While influential Twitter actors do play a role, this is confined to specific episodes and not as prominent as might be expected. To conclude, changing influence structures in the context of CMC raises the need to understand the more fundamental processes that generate and maintain such structures.

6. Fifth theme: online persuasiveness of messages

A strong tradition in social psychology, and one that has given rise to

influential models of social cognition, has discussed social influence in connection with persuasion and attitude change brought about by persuasive messages and how these are embedded in communication (e. g., Petty, 1994; Wood, 2000). CMC environments impose restrictions on the format such persuasive messages can take, for example, as more text-based or more image-based information. In addition, CMC environments provide specific contexts for persuasion to take place, some of which are recent developments such as influencer culture.

Balaban et al. (2022) focus on parasocial relationships as one central aspect of influencer culture. While parasocial relationships have been studied extensively in the field of television consumption (e.g., Rubin et al., 1985), the concept has proved equally important in explaining followership online. As Balaban and colleagues demonstrate, there is a complex interplay between the strength of the parasocial relationship and the perceived credibility of an influencer. This interplay is related to the effectiveness of product endorsement, a prime objective in influencer culture.

The work by Schlicht et al. (2022) sees a classical approach to persuasion research (i.e., the identification of persuasive attributes), although with novel methods in novel contexts. They investigate the effectiveness of message characteristics on the attractiveness of diet-related communication among adolescents online. Based on a data set of more than 70,000 messages, the authors find that positive sentiment, the inclusion of images and a subjective style of communication all contribute to the likeability of a message. This needs to be seen against another core finding, namely that message content did not play any significant role.

The contribution by Elareshi et al. (2022) returns to a more fundamental aspect of persuasion in the context of technology. Users need to be persuaded to sign up for services, to engage with platforms and applications and to turn to particular media content. Here it becomes clear that issues of persuasion and technology adoption and acceptance are intimately linked. In their work, Elareshi et al. (2022) integrate concepts from technology acceptance models (e.g., Davis, 1989) and the theory of planned behavior (Ajzen, 1991) to predict adoption of social TV services.

7. Sixth theme: human versus machine, who is the best social influencer?

By disrupting the usual spatio-temporal scaffolding sustaining face-to-face interactions, CMC offers the possibility to perform disembodied interactions (Valenduc & Vendramin, 2017). In addition, the uncertainty surrounding the conversation stakeholders' identity is transforming how social influence is achieved (Postmes et al., 1998). Therefore, the possibility arises that disembodied virtual agents might replace and influence humans in CMC (Rudnicki, 2017).

This dystopian vision of CMC, where non-human algorithms exercise similar influence as humans on opinions and beliefs, is explored by Duderstadt et al. (2022) and Riva et al. (2022). Inspired by Sherif's (1935) works on social norm learning, both replicate the formation and persistence of social norms, this time not only learned from humans, but also from computer-based algorithms. These studies provide insights into how this algorithmic influence works, and also into its restriction to specific tasks and domains.

By using a diffusion decision model (Voss et al., 2013), Duderstadt et al. (2022) explored the mechanisms underlying the formation of social norms by distinguishing decisions based on accumulation of sensory evidence from pre-existing beliefs. According to their observations, social norms learned from humans and non-humans rely on similar mechanisms. They imply that this learning process is based on the general belief that computers outperform humans in decision-making.

Nevertheless, according to Riva et al. (2022) this belief of superiority is restricted to specific domains. By distinguishing objective tasks characterized by a "real" true answer from subjective tasks, requiring more emotional and abstract thinking, Riva et al. (2022) observe that

algorithmic influence is limited to perception-related decisions but does not expand to more subjective domains. Yet, the origins of this distinction remain unclear and require further investigation.

8. Conclusion: current reflections and future directions for research

8.1. Online operationalizations of social influence

While in a pre-internet era, scholars had a quite clear understanding of what social influence was, and how one could measure it, the transition to online environments has transformed the shapes social influence can take. With that, its measurement has also transformed, providing scholars a varied toolbox for examining social influence in all its manifestations. Classically, influence was measured by (self-reported) shifts in attitudes, often indicated on Likert scales (Chaiken, 1980; Petty & Cacioppo, 1986); by behaviors, often through behavioral observations (Asch, 1951; Cialdini & Goldstein, 2004; Moscovici et al., 1969); or by the outcome of social decision-making, often taken as a derivative of identification and norm formation (Sherif, 1935; Tajfel et al., 1971).

From the current special issue we observe that these three pillars may not have changed much, but their manifestation, and with it their measurement, has undergone a drastic transformation. The methodological diversity that is clearly visible in the papers in this special issue seems to reflect the richness in methodologies currently available to researchers aiming to uncover social processes in CMC.

Likert-scale attitudes and behavioral observations are replaced by an accumulation of likes, shares, retweets, the use of similar words, and hashtags (e.g., Rovira-Sancho & Morales-i-Gras, 2022; Schlicht et al., 2022). Their measurement focuses no longer on an individual level, but focuses on spread through networks, allowing for large-scale automated content analyses.

Studies on online social influence also examine influence in terms of social outcomes: Do people feel engaged (Binder, 2023)? Do they experience conflict, or shared cognition (Roos et al., 2022)? Do they identify with the group (Lüders et al., 2022)? All of these can be assessed via Likert scales or more novel multi-modal analyses combining several behavioral indicators including speech and gesture. Content analyses of brief tweets, or longer online blogs provide more depth to these social outcomes: does a coherent collective picture emerge from the content of interactions in terms of ideology (Verniers et al., 2022), or is there an indication of some form of collective selfhood (Lüders et al., 2022)?

The geographical and temporal width with which social influence can occur furthermore extends the possibilities for measurement. Social influence needs not to be direct or immediate, as messages can be delayed and have the potential to reach users across the globe. For researchers, this allows for the derivation and extraction of data on influence across time and space.

8.2. Recommendations for future research

Based on the insights provided by the contributions to this special issue, we can develop three directions or recommendations for future research on CMC. First, and perhaps most clearly formulated in this special issue, is the necessity for an affordance-based rather than overly holistic approach. Different CMC channels offer distinct affordances for social influence. Some relate to affordances of the message (e.g., pictures, text, video), some affordances concern the source of the message (e.g., virtual, anonymous vs identifiable), some relate to the structure of the network (e.g., hierarchical or not, large vs small reach). This is not to say that an analysis of the functionality and features of CMC technologies on its own will be sufficient. What also gets highlighted by the present contributions is that social context, in the sense of social motivations and existing or emergent norms, enters into a dynamic interplay with affordances. Affordances can shape norms, thereby facilitating and strengthening specific avenues for social influence, as much as norms have an effect on how affordances get expressed in behavior. Likewise, individuals' fundamental social motivations do not change in online environments - but the affordances of such virtual meeting places will affect how individuals can and will act on their motivations.

Second, CMC is especially well-suited for the exertion of social influence and, as exemplified by the current contributions, the study of influence. Social influence online often comes in explicit forms, as shares, likes, follower counts, and so forth. Put differently, content generated by individuals automatically comes with attributes that indicate influence and is subjected to CMC functionalities that aim to maximize influence. At the same time, the blurring of boundaries among social contexts leads to a constant mingling of different influence processes. Commercial influence, from organizational entities as well as from individual influencers, occurs in the same sphere as interpersonal influence, in the form of dyadic and small-group interaction as well as broadcasting to personal networks of friends and acquaintances. Taken together, these functionalities, essentially a specific subset of affordances, may be a defining feature when considering the wider social and societal impact of CMC.

Third, there is an almost paradoxical imbalance between the potentially limitless forms of communicating information online and the way in which influence actually gets channeled. While CMC enables the reach of extensive audiences, available to anyone regardless of their standing, social-corrective factors in CMC communication still limit influence to be restricted to certain populations and certain messages. This imbalance is one of the numerous biases that have been discussed for online environments (e.g., Del Vicario et al., 2016). Social-corrective factors may concern technical affordances (e.g., algorithms that bias the information that individuals get to see), individual preferences to seek out biased information, or social norms or practices that are associated with specific platforms or online communication in general. On the receiver side, this results in the availability of *more* information, that is *less* representative of the total of all information that is available.

We close this editorial with some concluding words. This special issue exemplifies the important transformative impact CMC has on both the quality and the quantity of social influence; but at the same time, it also highlights the prominent and pervasive role of social influence processes in CMC. It seems that a lot can be learned by psychologists and others about social influence by looking at its numerous manifestations in CMC environments. This means that we always need to ask complementary questions: how does the medium affect the way people influence and are influenced by others; and conversely, how do people (strategically) use the medium to accomplish change in others, maybe even in society? Together, the diverse set of articles in this special issue testify to the opportunities this field of research has to offer and how it promises to bring together researchers from a wide range of theoretical and methodological backgrounds pursuing new theoretical and methodological insights.

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[1] Author order is completely randomized.