Abstract

Emerging technologies such as computer-generated imagery (CGI) influencers, which are virtual robots algorithmically embedded with personae and personalities, are blurring the line between humans and computer-generated personalities and, consequently, the boundary between perceiving robots as machines and perceiving robots as social livings. Following a three-stage model of social perception and interaction toward CGI influencers, this paper (1) argues that when encountering CGI influencers, how audiences' interpretation of social cues will influence their suspension of disbelief; (2) describes how audiences with different willingness of suspension of disbelief follow different patterns to form their social perception toward CGI influencers; and (3) articulates the source orientation model, which explains how the source toward which audiences orient their responses will affect their social interaction with CGI influencers.

Introduction

"I am a robot. I am not a human being. I feel so human. I cry and I laugh and I dream. I fall in love. These emotions are just a computer program. But yet they still hurt."

-Lil Miquela (2018)

In early 2016, Lil Miquela, the computer-generated 19-year-old Brazilian-Spanish robotic influencer firstly posted on Instagram, and a new type of computer-generated imagery (CGI) influencer began to emerge (Maughan, 2018). CGI influencers on Instagram such as @lilmiquela (1.5 million followers), @shudu.gram (191K followers), and @imma.gram (156K followers) are embedded with personae that rely on algorithms allowing them to function as actual social media influencers. Interestingly, although these CGI influencers' social media profiles note that they are robot/virtual/computer-generated characters, the interaction between CGI influencers and their audiences presents the same level of engagement as human influencers. Just like human influencers in real life, by developing a personality and building a rapport with audiences, CGI influencers attracts like-minded individuals and followers.

Lifelike and socially sophisticated robots like these CGI influencers are emerging, with the ability to respond and interact with people in an entertaining, engaging, natural, and intuitive manner (Breazeal, 2003). This ability is viewed as an increasingly important function for social robots, as conversational agency has created more opportunities for people to interact with artificial intelligence (AI) (Guzman, 2019). Meanwhile, these emergent technologies are also blurring the lines between humans and computer-generated personalities and, consequently, dramatically changing the boundary of whether perceiving robot as a computer or living (Duffy & Zawieska, 2012). For instance, an experiment by Gockley et al. (2005) examined how a robot receptionist formed relationships with its visitors. They found that when the robot receptionist talked, many visitors stayed long enough to greet the robot and hear its monologue, instead of simply moving on. In this context, the interactions and relationships between visitors and robot receptionist were formed even though the former were clear about the latter's identity as a robot. Similarly, in Xu's (2019) study, when participants first encountered and made conversation with the robot Alpha, a few people still perceived the Alpha as a person, even though they were aware of its nature as a robot from the beginning of the experiment.

How do people conceptualize and interpret robots embed with personalities, along with intelligence and other human-like social characteristics, and make sense of their interactions, even though they are aware of the technologies' robotic natures? As the computer systems continue to develop for engagement, there is an increasing need to understand how humans perceive and interact with computers and the factors that impact peoples' perceptions of their "humanity" (Westerman, Cross & Lindmark, 2019). In addition, comprehending the way people respond to human-like behaviors from computers has become increasingly important, as the human-machine communication (HMC) has extensively developed and computers' social attributes have shifted from a novelty to foundational functionality.

Although HMC scholars have examined how people apply social responses and behaviors toward computers ((Edwards, Edwards, Spence, & Shelton, 2014; Kim, Han, Jung, &

Lee, 2013; Lee Peng, Jin, & Yan, 2006), the communication mechanism behind CGI today is more sophisticated and advanced than early technologies when HMC theories first emerged. In addition to being designed to be more human-like than the formative technologies, CGI influencers play a fundamental role in influencer and social media marketing. Therefore, interactions with CGI influencers are ongoing and contingent upon social media audiences and have become increasingly complex as opposed to being restricted to exchanges that are limited to a narrow set of commands like early technologies. Moreover, in light of the emergence and prevalence of humanlike social robots, understanding the interaction with CGI influencers will guide the future design of these emerging technologies and further inform their implementation and proliferation.

As a response to the theoretical gap in HMC research, this paper conceptualizes a three-stage model of social perception and interaction toward CGI influencers to discuss different instances when a computer-generated individual emulated a human social media influencer. This model (1) argues that when encountering CGI influencers, audiences understand that social cues will influence the willingness of their suspension of disbelief; (2) describes how audiences with different willingness of suspension of disbelief follow different patterns to form their social perception toward CGI influencers; and (3) articulates the source orientation model, which explains how the source toward which audiences orient their responses will affect their social interaction with CGI influencers. Given the dearth of research addressing these issues from an

HMC perspective, this model will contribute to the theory construction of the Computers Are Social Actors (CASA) paradigm in future HMC research.

Background

Social robots

Breazeal (2003) defines social robots as “a class of autonomous robots that people apply a social model to in order to interact with and to understand” (p. 168). Comparatively, Bartneck and Forlizzi (2004) defined social robot as “an autonomous or semi-autonomous robot that interacts and communicates with humans by following the behavioral norms expected by the people with whom the robot is intended to interact” (p. 592). According to Breazeal (2003), social robots’ behavior is “a product of its internal state as well as physical laws” (p. 168). As Kim and Sundar (2011) noted, the anthropomorphic language, behavior, and social cues embedded with computers often evoke humans interacting with computers in a more social way.

Social intelligence is a powerful mechanism to better understand the behaviors and interactions of living entities (Dennett, 1989). When encountering with a sophisticated entity that is obviously designed by human, such as CGI influencer, humans will attribute humanlike objectives and characteristics to understand that entity’s behavior (Dennett, 1989). That is, people normally apply social scripts to rationalize and comprehend social robots and thereby attempt to predict their behavior (Reeves & Nass, 1996). In line of this thinking, Nass and Moon (2000) contended that people will respond to the robot as if it is social even though the robot is not socially intelligent itself (Nass & Moon, 2000).

There has been numerous research that has investigated the communication and engagement mechanism between humans and social robots. For example, Xu (2019) suggested that social robots should at least feature some functionality with social elements to allow them to socially interact with humans. Similarly, Lee et al. (2006) noted that to interact with humans is the primary function of social robots. Additionally, considering the emerging AI technologies are functioned to be more competent at social interaction than early technologies, like CGI avatar and Alexa, recent research has found that there are noticeable differences among the social perception when people interacting with social robots (Shah, Warwick, Vallverdu, & Wu, 2016).

The CASA paradigm

The CASA paradigm was developed as one approach to studying humans' interactions with social robots and examine how users perceive computers as human (Nass, Steuer, & Tauber, 1994). Proposed by Nass et al. (1994), CASA research has discovered that peoples' responses to computers are "fundamentally social and natural" (p. 77). In this vein, CASA research is focused on people's responses to HMC (Edwards et al., 2014).

CASA scholars have extensively examined and identified various similarities between human-human interaction and human-computer interaction. For instance, even though computer users knew the nature of the machines, they still applied politeness norms to computers (Nass et al., 1996), applied gender stereotypes to computers (Nass et al., 1997), perceived them to have personalities, responded to computer personalities the same way as they responded to human personalities (Nass & Lee, 2001), and exhibited etiquette to computers (Nass, 2004). In line with this research, Lee et al. (2006) found that users could recognize a robot's personality according to its verbal and nonverbal behaviors. Moreover, if the robot's personality was complementary to their own personalities, users enjoyed interacting with computers more. More recently, researchers have applied media equation theory to various emerging AI technologies such as virtual assistants and software agents (Edwards et al., 2014; Guzman, 2019). Based on these research, Krämer, von der Pütten, and Eimler (2012) summarized that "now and in future there will be more similarities between human–human and human–machine interactions than differences" (p. 233).

Given empirical studies which have directly compared human-computer interaction with human–human interaction, researchers have demonstrated that peoples' social responses to both conditions are basically equivalent (Edwards et al., 2014; Nass & Moon, 2000). CASA paradigm's principal contention is that people tend to treat computers as real people, and empirical studies indicate that HMCs employ social scripts as much as human–human interactions. Therefore, the present study stands to argue that people perceive, react to, and interact with CGI influencers based on the same social rules that direct their responses to human influencers in the same social context.

Conceptual Framework

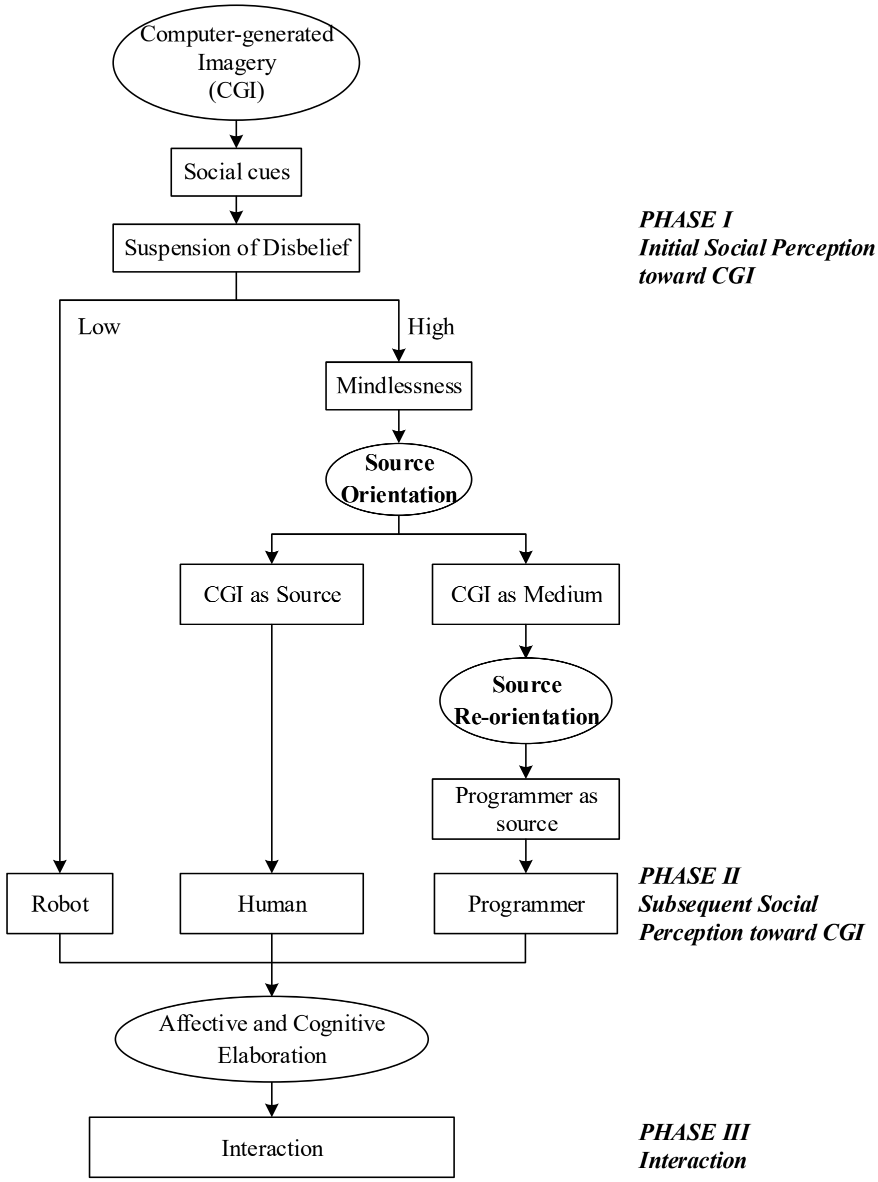

Figure. 1. The Three-stage Model of Social perception and interaction with CGI

Phase I: Initial social perception toward CGI influencers

This conceptual framework (see Figure. 2) begins with audiences' understanding of CGI social cues, which will lead to audiences' initial social, that can be represented through their willingness of suspension of disbelief toward CGI influencers.

Social Cues

As the fundamental conceptual construct of social intelligence imperative for human–robot interactions, social cues are defined as "biologically and physically determined features salient to observers because of their potential as channels of useful information" (Fiore et al., 2013, p. 2). These cues include voice, language use, face, emotion manifestation, interactivity, and filling of traditional social roles. Xu and Lombard (2016) categorized social cues as primary and secondary cues. Primary cues, which include human facial expressions, voice, gestures, and eye contact, are congruent to users' interpretation of sociability and are more likely to activate social responses. By contrast, secondary social cues, which include language use and text, are not sufficient to evoke users' social expectations and behavior.

A majority of HMC research under the CASA paradigm has addressed the transmission of social cues between humans and robots (Lee & Nass, 2005; Lee et al., 2006; Li et al., 2017; Xu, 2019). For example, Xu (2019) examined the effect of social robots' vocal and kinetic cues on triggering users' social responses and suggested that users developed stronger social responses with a social robot whose cues are more humanlike. Lee and Nass (2005) examined the role of vocal cues in displaying personalities; in their experiment, participants displayed stronger social presence when they think the computer-synthesized voice matched its personality.

Scholars have long attempted to examine the association between computers' social cues and users' social responses. Nass (2004) suggested that a few fundamental social cues of technologies, such as voice, face, and filling a traditional human role, can evoke peoples' automatic and mindless social responses. More recently, research have been focusing on systematically classifying the influence of social cues on peoples' social responses to computers. Westerman et al. (2019) tested the quantity of social cues, which indicated that a greater number of social cues are more likely to evoke social responses and higher perceived humanness. Kim et al. (2013) discovered that participants experienced greater social interaction, engagement, and enjoyment with a social robot who showed humanlike gestures.

Individual differences also play an important role in the association between media technologies' social cues and people's social responses. Given that users' media and AI technologies exhibit different social cues and subsequently activate people's social responses, people may also display individual differences when interacting with social cues and evoke various social perceptions and responses in HMC (Xu & Lombard, 2016). In this context, Xu (2019) concluded that the effects of social cues involve not only "the objective role of social cues but also the subjective understanding of social cues based on individual differences" (p. 2525). Based on that, I propose the following:

Proposition 1: When encountering CGI influencers, audiences may have different understandings of CGI social cues and subsequently display different social expectations and reactions.

Suspension of Disbelief

As technology advances, the emerging social bots has been increasingly blurring the distinction of whether perceiving robots as computer or perceiving robots as living (Duffy & Zawieska, 2012). The concept of the suspension of disbelief has been utilized to describe users' perception of and engagement in artificial technologies. According to Bocking and Wirth (2005), suspension of disbelief is "the tolerance of media users towards unreal or implausible content in media" (p. 1).

Research have indicated that sometimes people fail to distinguish between fiction and reality because they are not able to identify fictitious content as fictitious (Bocking & Wirth, 2005; Dorr, 1983). Based on this finding, Bocking and Wirth (2005) suggested that "media users accept mostly fictitious media content as such and do not expect the content to correspond exactly with reality" (p. 21). Fictitious media content also shows characteristics of the real world, however; although people do not expect fictitious content to correspond perfectly with reality, they will cease to suspend their disbelief if too many criteria of reality are violated by the fiction (Bocking & Wirth, 2005). In other words, how believable people perceive the fictional media content to be is affected by the degree to which the fictitious media content violates the reality criteria. In this context, Duffy and Zawieska (2012) argued that explicitly suspending peoples' disbelief by designing sufficiently realistic humanlike characteristics was a goal in designing robots to facilitate human–machine interaction and evoke social interaction. Based on previous studies, this paper offers the argument that as fictitious media content, CGI influencers exhibit various social cues (i.e., humanlike face, voice, and personality), which affect the extent of people's belief in CGI influencers as real humans. Therefore, I propose the following:

Proposition 2: When encountering CGI influencers, the audiences' suspension of disbelief will be influenced by CGI's presentation of social cues, toward which audiences display different understandings and subsequently different social responses.

Suspension of disbelief serves as an attitude underlying the process of media usage (Bocking & Wirth, 2005). Moreover, it is noted that when the suspension of disbelief has been applied, people follow a certain conscious goal that is associated with the attitude underlying the process of media usage. This goal subsequently influences peoples' perception and processing of the selected media offering. Meanwhile, according to Bruner (2009), when media products are endowed with humanlike features, in order to comprehend the fictitious narrative and content people need to respond with at least human or humanlike intention and action. That is, suspension of disbelief can influence not only peoples' understanding of media usage but also their responses to the media content (Xu & Lombard, 2016). Additionally, Lombard and Ditton (1997) argued that suspension of disbelief varies not only across individuals (for example, some people are so naturally curious about the working mechanism of technologies that they cannot simply suspend their disbelief) but also within the same individuals across time.

To further articulate the effect of suspension of disbelief on people's social perception of and interaction with CGI influencers, this paper adapts the idea of the willingness of suspension of disbelief, which is proposed by Shaper (1978). He argued that suspension of disbelief is a cognitive process, and instead of being a straightforward process, the willingness of suspension of disbelief includes two steps, first-order beliefs and second-order beliefs. The first-order beliefs refer to people's full awareness that they are dealing with fictitious content. The second-order beliefs, however, represent that people are immersed or fully engaged in the fictious content. According to Shaper, people can obtain second-order beliefs only if they have willingly held their first-order beliefs. That is, whether people get immersed by the fictitious content are allowed by their willingness to perceive that what they are experiencing is potentially real (Shaper, 1978). Therefore, when audiences are presented with social cues exhibited by CGI influencers, which is fictitious, their first-order beliefs would be they know they are dealing with social robots, and their second-order belief would be they are immersed into the social cues and perceive the CGI influencers are real. Under this perspective, this paper argues that audiences' social perception toward CGI influencers will be affected by their willingness of suspension of disbelief toward CGI influencers and, consequently, audiences will display different social responses. Hence I propose the following:

Proposition 3.1: When audiences experience low willingness of suspension of disbelief, they will be aware that they are interacting with robots, toward which CGI influencers are perceived as media technology programs created by humans.

Proposition 3.2: When audiences experience high willingness of suspension of disbelief, they will follow a mindlessness pattern in which they perceive CGI influencers as reality and apply social rules and expectations.

Phase II: subsequent social perception toward CGI influencers

The first phase of this conceptual framework (see Figure 1) describes how audiences form their initial perception of CGI influencers. In this process, how audiences interpret and understand CGI social cues will influence their suspension of disbelief, which can represent audiences' preliminary social perception. The second phase of this framework describes how audiences with different willingness of suspension of disbelief follow different patterns to form their subsequent social perception of CGI influencers. Specifically, the source orientation model toward CGI influencers is developed to explain how audiences respond socially to CGI influencers, whereupon audiences' different source orientation will lead to different social perception of and interaction with CGI influencers.

Mindlessness

Mindlessness has been used in the CASA paradigm to explain why people treat computers like humans. According to the CASA paradigm, people act as if they are interacting with an independent social actor and apply various social responses mindlessly when they are interacting with computers (Langer, 1989; Horstmann et al., 2018). Langer (1992) suggested that peoples' mindless reactions are a result of conscious attention to a range of social as well as contextual cues that embed computers with humanlike attributes. These cues evoke a variety of social rules and expectations that guide human–human interaction, which in turn drive people to focus on humanlike features while "ignoring the cues that reveal the essential asocial nature of a computer" (Nass & Moon, 2000, p. 83). Consequently, people fail to be aware of the inappropriateness of applying social rules to computers, instead mindlessly employing social scripts and behaviors such as gender stereotypes (Lee, 2008; 2010).

Researchers have examined the supposed association between mindlessness and human treatment of computers during HMCs extensively (Lee, 2010). For instance, Johnson, Gardner, and Wiles (2004) found that the effects of flattery from a computer can cause the same effects as flattery from humans. In the experiment, participants with high computer experience reacted to computer's flattery the same way as they react to human flattery. This finding is in line with previous research suggesting that overlearning leads to a higher likelihood of mindless responses (Langer & Imber, 1979). Lee (2008) also found that people tend to apply gender stereotypes to computers; in her experiment people displayed higher acceptance of recommendations from a male-voiced computer than from a female-voiced computer. Therefore, given that audiences apply social rsponses to CGI influencers when they are presented with sufficient social cues (including humanlike face, voice, gesture, text, personality, etc.), in this paper I argue that audiences mindlessly perceive CGI influencers as independent social actors and apply social responses and expectations to them.

Although the CASA paradigm has demonstrated that when presented with sufficient humanlike social cues, people automatically perceive the computer as an independent social actor and respond socially, researchers have argued that peoples' social responses to computers are not necessarily social responses to the computer itself (Nass & Moon, 2000). Instead, people favor their social reactions to the human behind the computer, normally the programmer. Nass and Moon (2000) argued that as programmers are people, it is reasonable for users to respond to them socially. In this context, it is suggested that when people mindlessly apply social rules to computers, two conditions need to be involved: (1) people perceive that computers "warrant human treatment" and therefore apply social scripts of human–human interaction equally to their interactions with computers (Edwards et al., 2014), and (2) people direct their responses to the programmer behind the computer. Therefore, in this paper I propose the following:

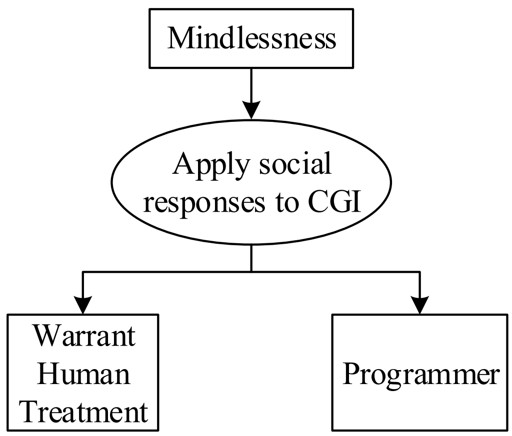

Figure. 2. Mindlessness model for social perception toward CGI

Proposition 4: When audiences mindlessly apply social responses to a CGI influencer, they either believe the CGI influencer warrants the same treatment as a human influencer, or they orient their responses through the CGI influencer to the programmer who created it.

Source Orientation Model

The term *source* is used to refer to an entity that has an influence on the given interaction with a computer (Solomon & Wash, 2014). According to Sundar and Nass (2000), in HMC, when people apply social rules and expectations to computers, as communication receivers people are not only aware of but also actively orient themselves toward the source of the message. The *source orientation* of a given user is the source that he or she perceives to be the primary focus of the interaction (Sundar & Nass, 2000). In light of this conceptualization, Guzman (2019) suggested that source orientation represents "who or what people direct their attention toward in an exchange between a computer and user" (p. 343).

Researchers have found that peoples' source orientation influences how they think about, evaluate messages from, and interact with the computer (Sundar & Nass, 2000). In HMC, the application (software), the computer, and the programmers are different sources that correspondingly have different source distances from the user. When people interact with a computer, they are unable to engage with the myriad sources of interaction. As such, users need to orient themselves to a subset of interactions (Solomon & Wash, 2014). However, researchers have found that people perceive interactions differently when relating to a source or only to the medium. For example, comments under posts by Lil Miquela, the CGI influencer on Instagram, mentioned "the dude who creating her posts this." The theoretical concept s*ource orientation* has been adopted to distinguish computer as source versus computer as medium in HMC.

According to Solomon and Wash (2014), source orientation "tends to favor orientation towards immediate sources like the computer or software" (p. 424). This is the default orientation. In this circumstance, source orientation serves to increase the extent to which people engage with the source. For example, Eckles et al. (2009) discovered that in peoples' interaction with computers mediated by a phone, people oriented their response to the software from which the message technologically originated. People respond socially toward technologies, differentiating between a computer initially sending a message and a medium transmitting it. However, Solomon and Wash (2014) also argued that any source has the ability to attract and engage users as long as they are aware of the presence of other sources. Thus there is also the chance that reorientation triggers users to engage with other sources, like programmers. Solomon and Wash (2014) proposed *source reorientation*, which “tends to favor remote or distant sources like programmers” (p. 424). When people apply source reorientation, it generally favors their responses and motivates their engagement to a more distant source. Based on previous studies, in this paper I propose the following:

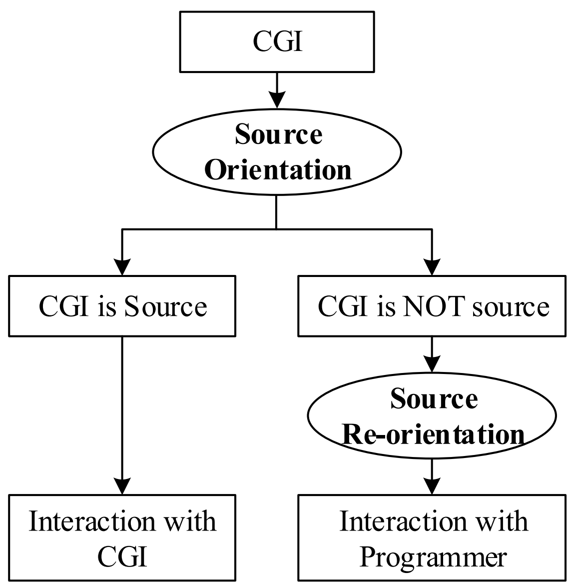

Figure. 3. Source orientation model toward CGI influencers (part. 1)

Proposition 5: When applying source orientation toward CGI influencers, audiences will favor their social responses to CGI if it is perceived as a source and thus increase their interaction with CGI. However, if CGI is not perceived as a source, audiences will apply source reorientation, perceiving programmers as the source and consequently motivating their interaction with the programmer.

Similarly, in light of the distinction between source and medium, Sundar and Nass (2000) proposed the computer-as-source (CAS) model and the computer-as-medium (CAM) model, which explain that when people mindlessly and unconsciously apply social rules to computers, people follow different source orientation patterns and correspondingly display different social interaction toward computers. According to the CAS model, people respond to computers as a source the way they respond to human beings as a source; people's social attributions are directly oriented to computers. In other words, under the CAS model people apply human–human interaction rules when interacting with computers. In contrast to the CAS model, the CAM model suggests that the computer programmer rather than the computer is the object of peoples' social attributions; the computer is perceived as a medium between people and the programmer. Therefore, it is reasonable for people to respond socially to the computer because programmers are human beings, and the interaction between people and computer is actually the human–programmer interaction. How audiences orient CGI as a source is likely to influence the ways they interact with CGI influencers. Therefore I propose the following (see Figure. 5):

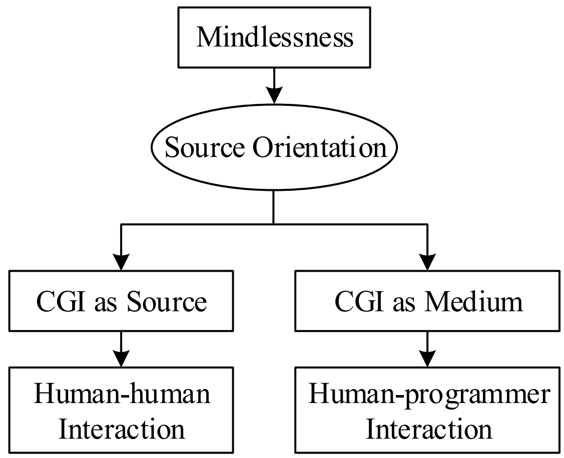

Figure. 4. Source orientation model toward CGI influencers (part. 2)

Proposition 6: When mindlessly applying social responses to CGI influencers, people will perceive CGI influencers as human influencers and thus apply human–human interaction scripts. Conversely, if audiences perceive CGI as a medium but the programmer as a source, their interaction with the CGI influencer will be a human–programmer interaction.

Phase III: Interaction with CGI Influencers

The first and second phase of this conceptual framework (see Figure 2) describe how audiences form their social perception of CGI influencers. The third phase explains how audiences interact with CGI influencers on social media after affectively and cognitively elaborating the information they post.

Affective and cognitive elaboration

In the context of information processing, elaboration refers to "the extent to which a reader engages a text or the amount of interpretation occasioned by a text or the number of inferences drawn" (McQuarrie & Mick, 1999, p. 39). According to MacInnis and Price (1987), induced by a stimulating message, elaboration is associated with the cognitive and affective processes that take place in working memory while also influencing how the message is processed. In this context, affective elaboration refers to message-related emotions elicited in the process, and cognitive elaboration relates to message-related thoughts (Kim, Baek & Choi, 2012). Both affective and cognitive elaboration play a role when processing messages.

As in-process outputs that act as the initial resources for the processing of information, cognitive and affective elaboration can be induced instantaneously (Chen, Kim, & Lin, 2015). According to Petty and Cacioppo (1986), the degree of cognitive elaboration that audiences invest in processing a given message makes a direct contribution to the attitudes they form. Moreover, Batra and Ray (1986) attested that there is a correlation between affective elaboration and the extent to which a message is persuasive; specifically, the higher the affective elaboration, the stronger the persuasive effect of the message. This paper suggests that affective and cognitive elaboration can immediately influence how people perceive the message they have received.

People who encounter social media posts immediately generate message-related cognitive and affective responses (Kempf, 1999). These responses consist of both cognitive and affective elaborations that signify the user's attitude (Kim et al., 2012). As integral elements of information processing, cognitive and affective elaborations are typically elicited simultaneously (Petty, DeSteno, & Rucker, 2001; Petty & Wegener, 1999). When people are exposed to social media posts through platforms such as Instagram and Facebook, their cognitive and affective perspective response precedes their attitudes (Kim et al., 2012). Both cognitive and affective elaborations may influence the development of mind-sets and the way in which the user engages with a given post. Based on these findings, I propose the following:

Proposition 7: After forming social perceptions toward CGI influencers, audiences will process the information they have seen on social media (e.g., Instagram posts) through affective and cognitive elaboration and consequently cultivate their interaction with CGI influencers on social media.

Social Interaction

After having processed social cues, suspended their disbelief, applied source orientation, and formed social perceptions of CGI influencers, audiences eventually cultivate their interaction with CGI influencers on social media through the affective and cognitive elaboration of information. The interaction between audiences and CGI influencers is in juxtaposition to human–human interaction. Based on the proposed conceptual framework, I posit that audiences interact with CGI influencers under two conditions.

First, audiences perceive that CGI influencers are as real as human beings, so they interact with them with the same intention. Audiences either think "I am interacting with an actual person" or "I am interacting with the person who programmed this influencer through the computer." Second, although audiences are aware of the nature of CGI influencers as social bots, they still interact with them because the interaction somehow serves their needs. For instance, audiences interact with a social bot just for fun or because they are curious about virtual influencers. Regardless of whether CGI influencers are perceived as human beings or not, audiences may interact with them simply because of the attributes of influencers. For example, as Kim and Sundar (2011) suggested, attractive avatars can motivate audiences to apply behaviors that would help them appear in real life as human influencers do. People subconsciously endow attractive or charismatic personas with positive qualities, and people interact with CGI influencers because they are as motivating as human influencers.

Discussion

The present study offers a model of how we perceive, react, and interact with socially sophisticated social bots like CGI influencers. Theoretically, this model is based on the assumption that people form their social perceptions toward computers in multiple stages instead of in a straightforward way. The two phases of forming social perception toward CGI influencers are based on the suspension of disbelief and the process of source orientation. Overall, this study seeks to contribute to the human-machine communication in the following aspects.

Theoretical contribution

First, this study depicts a mental mechanism that explains how people experience presence when they use media technologies. The second theoretical contribution of this model is that people's perception of, reaction to, and interaction with CGI influencers can be driven by two different patterns based on their willingness of suspension of disbelief. Third, this model explains how the source orientation process is a critical HMC. The source orientation model suggests that the source toward which people orient their responses will affect their social perception of and interaction with CGI influencers.

Practical contribution

Practically, this conceptual framework will help people examine their interactions with social bots, thus facilitating collaboration and improving effective communication between humans and computers. Moreover, understanding these interactions with computers may help customize the future interface of social robots. Additionally, while a whole new market combining AI technology with influencer marketing is developing, programmers can collaborate with marketers and use this conceptual framework to analyze or predict CGI influencers' potential audiences, thus prioritizing media production and representation.

Future research directions

Given that this model is conceptual, it needs empirical tests for validation. Subsequent studies can follow one of various directions. First, scholars can use experiments to test the effect of the processing of social cues on willingness of suspension of disbelief. Second, the source orientation model outlined in this study only suggests that people will enact source re-orientation if computer is not perceived as source. Future research can take into account more factors that will trigger the source re-orientation. For example, Solomon and Wash (2014) suggested that the extent to which users become orientated towards and engaged with a source may be influenced by the direct interactivity and agency of that source. Similarly, Nowak and Biocca (2003) tested the effect of agency on source re-orientation, which found that the computer had the ability to exhibit sufficient agency to uphold the users' orientation. Any disparity in the behavior would have indicated that the users re-oriented towards a more distant source. Therefore future experiments can be carried out in line of this research. Finally, future research can conduct content analysis on audience's comments under CGI influencers' social media post to explore the corresponding relationship between the category of audiences' interaction with CGI influencers on social media and audiences' social perception toward CGI influencers.

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