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Virtual Influencers:Walking Around the Boundary of Real and Virtual

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Abstract: As a new agent appearing on social network, virtual influencers are becoming a strong force to be reckoned with worldwide due to their hyper-realistic appearance and distinctive personality, which sparks hot discussion of real and virtual issues in social media. This paper take an Instagram virtual influencer, Imma as analysis object, explores her interaction with followers in light of parasocial theory. Case study and content analysis have been used as main methods. Through analysis, it can be proposed that the reality in social media should not be limited to physical form of entity, and the reality in psychological existence is also a type of reality.

1. Introduction

Virtual influencers firstly came into public view in 2016 when Brud, a company based in Los Angeles, set up an account Lil Miquela on Instagram. Since then, virtual influencers have been gaining increasingly popularity around the world. In a newly report "The Top Instagram Virtual influencers" released in 2019 by social media analytics firm HypeAuditor [1], it is said that compared to real influencers, followers on Instagram are more likely to engage with virtual influcencers content.

Virtual influcencers, or CGI influencers are computer-generated imagery with hyper-realistic appearance and personalities akin to human beings, primarily controlled by media agencies. They are turning into a strong trend to be reckoned with in the influencer marketing industry, with a growing number of them in various identities popping up on social media, such as musicians, artists and models, etc. The rise of virtual influencers on social media has sparked heated debate about real and virtual.

To further discuss the issue mentioned above, this study conducted a case analysis of a virtual influencer, Imma. Created by Japanese CG company ModelingCafe, Imma is the world's first CGI fashion model with over 300k followers on Instagram till now. In her profile on Instagram, she introduces herself as a virtual girl who is interested in Japanese culture, film and art. According to HyperAuditor's report, Imma enjoys higher followers engagement rate of 3.46%, even exceeds the most popular virtual influencer Lil Miquela. Therefore, choosing Imma and her followers as research object can give us better glimpse of virtual and real question by exploring their interaction relationship on Instagram.

Therefore, the innovation of the research lies in two aspects. One is to focus on virtual influencers, the newly emerging subject that carries the "amphibious" human-robot relationship. Virtual

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influencers have born the integral characteristic of real and virtual. That is, as a set of relative concepts, real and virtual refers to the opposite. The former indicates the objective state of existence being true and physical, while the later is based on imagination and illusion. However, virtual influencers mix the two together, presenting such a contradictory situation where the virtual and real coexist in one thing, which is worthy of further discussion. Another significance of the study is that the interaction relationship formed by virtual influencers and followers has distinct features from real influencers and their fans. In the relationship between virtual influencers and followers, there are real and virtual meaning games and mutual negotiations. So this case analysis will provide a valuable insight into identification real and virtual cognition on social media.

Based on above, this study will discuss how virtual influencers and their followers perceive the nature of virtual influencers and their relationships, then offer an in-depth look at virtual and real issue regarding to the phenomenon virtual influencers. The research questions are as follows :

- How do followers perceive virtual influencers as real or virtual?
- How do virtual influencers construct, blur and transcend virtual-real boundary through parasocial interaction?
- How do virtual influencers shape their personal relationship structure to identify themselves?
- How do followers form and develop their relationship with virtual influencers?
- How do followers perceive their relationship with virtual influencers?

Specifically, the paper will be divided into four parts. Firstly, I will give an outline of literature review about parasocial interaction and researches about online virtual avatars, which will provide a strong theoretical support for subsequent analysis. Secondly, I will discuss the identity of virtual influencers in a dynamic perspective. Thirdly, I will try to describe the relationship between virtual influencers and followers. Lastly, I will discuss the essence of virtual and real conception according to former analysis.

2. Literature Review

2.1. Parasocial interaction

Parasocial interaction was firstly proposed by Horton and Wohl in 1956, which refers to the process of a media audience's reaction to media persona. In the process, media audience perceives media persona as an intimate conversational partner. Specifically, parasocial interaction describes a "simulacrum of conversational give-and-take", indicating its one-side nature and symbolic characteristic based on imagination [2] [3].

The origin of parasocial interaction can be traced back to the era of traditional mass media. Early researches mainly focus on audiences' interactions with broadcasters in news programs [4][5][6] and media characters in soap operas [7][8][9], and point out that the mass media has created an intimate illusion for audiences with media persona. With more talk shows appearing in radio and television, this new kind of programme has prompted researchers to explore the interaction between audiences and talk show actors [10][11][12][13]. Subsequently, the related research interests of scholars turn to be more diversified, including parasocial interaction in computer games [14][15], comedians [16], football teams and athletes [17], reality shows [18]. The rise of social media provides a new field of practice for parasocial interaction theory and researchers turn their attention to parasocial interaction formed by fans and influencers on social media platforms, such as content producers on Youtube [19], celebrities and media characters on Twitter [20][21][22]. The hyper-interactive social media has changed the way fans interact with media persona, as it allows for more immediate communication and interaction [22]. Unlike mass media, on social media platforms, fans can be involved in more interactive engagements like comment on and like the posts of media persona they follow at anytime

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and anywhere [23], which not only helps to establish parasocial bonds but diversify types of parasocial relations formed with media persona [24].

Nevertheless, the majority of scholars focus on the context of traditional mass media, particularly in radio programme and television show. However, the advent of social media has altered the way people interact with each other, including influencers and fans [25][26][27]. Parasocial interaction should be further discussed in light of social media context as it provides fans and influencers with more direct and easier access to interactive communication[28], which helps to increase the likelihood to form parasocial relationships as social media makes it possible to find more immediate and intimate information about the influencers[22][29]. Besides, previous researches of parasocial interaction have studied real interaction subjects. While as a new emerging phenomena, virtual influencers are different from real-life influencers due to their virtual identities, which might carry on distinct neo-characteristics regarding to their interaction with followers.

2.2. Virtual Characters

Virtual characters on the internet are becoming increasingly significant in many research fields, such as cognitive neuroscience [30], video games [31], and virtual reality [32]. Aline and Beatrice [30] claimed to have found that human-like characteristic of virtual characters to human show a positive linear relationship with familiarity. Apart from appearance, Mike Poznanski and Paul Thagard [31] pointed out that simulating personality over time also helps to create more realistic and believable virtual characters. Furthermore, the study of Katja Zibrek, Elena Kokkinara and Rachel McDonnell [32] incorporated both appearance and personality into an experiment, and result suggests that affinity towards virtual characters is a complicated interaction between the characters' appearance and personality. Additionally, when virtual influencer as a new kind of virtual character come out on social networks in recent years, this new phenomenon seems to raise more questions from algorithm issues [33]to ontology and ethics in online spaces [34]. Anna and Nickie discussed that there are four key factors contributing to the creation and management of a virtual influencer, including the realism of virtual influencer, the mutative algorithm of social media and the post content. However, Ben shed a light on the ontological and ethical perspective, and contends that there is no meaningful difference between virtual influencers and flesh-blood influencers in terms of ontology online, leading to the discussion about ethical issue such as moral responsibility, motivation and transparency. Although virtual influencer is one of virtual characters on social media, its hyper-realistic appearance, human-like subject narrative online and anonymous, kind of mysterious operation process behind, all suggesting it is unique from previous virtual characters. And since virtual influcencer is a new phenomenon online, there is still lack of research about that field, it is worth further study.

3. Discussion

3.1. The nature of virtual influencers

3.1.1. Identity of construction process

Because of hyper-realistic appearance, virtual influencers are easily mistaken as real human when they first show up in social media. Virtual influencer Imma initially delineate conceptual boundary between herself and reality, but she keeps incorporating reality elements in the interaction with followers, and tries to avoid presentation out of certain situation. Instead, she or the company behind her consciously adds specific and seemingly realistic details to construct her integrated identity. In the process, Imma selects and combines various elements to present herself, which often leads to constructing, blurring and transcending real-virtual boundary.

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To construct the identity of virtual influencer, in addition to recognize herself as a virtual girl in Instagram profile, Imma directly attaches specific tags with identity attributes to her daily posts, such as "#virtual model", "#tender person", "#cgi" and so on, to steer followers form cognition of her identity in certain direction. On the other hand, she sometimes intentionally implies her virtual identity to distinguish her from alive subjects. She once posted a picture featuring two little dogs playing with her, adding such tag "#わんこは CG じゃないよ(The cute dogs aren't CG)" which refers to the difference between her and real existent life. Raising questions to followers with oriented labels and indicators in posts is also a common way. For example, she put a question, "What am I made of...??[small orange diamond][black small square][small blue diamond][large orange diamond], along with a photo highlighting her partly pixelated face. Besides, she interacts with other virtual influencers like KFC's virtual brand ambassador, Colonel Sanders in photos, as a hint of their shared commonality: virtual identity. When followers asked if they were virtual as well, Imma gave positive reply.

However, real-virtual boundary constructed by virtual influencers is not absolute and static. On the contrary, it is in the dynamic process of meaning game and mutual negotiation through interaction initiated and directed by virtual influencers, with the outcome that virtual-real boundary is blurred, which is also one of the significant factors for virtual influencers to gain trust and acceptance from followers. Although the same is true for their human counterparts, virtual influencers have a harder time earning trust which in turn requires them to blur the boundary to the great possible while retaining their virtual identity.

The paths to blur virtual-real boundary can be roughly divided into three directions. Firstly, create a "simulacrum of conversation" by bodily and verbally acknowledging the existence of followers. Bodily, most of her photos posted on Instagram employ direct eye-gazing, which can effectively trigger an automatic illusion, giving followers a faux sense of visual intimacy. Verbally, Imma tries to interact as a real human by asking questions and replying comments in colloquial and natural language. During COVID-19 quarantine period, she posted a question "What should I do today?" and asked followers if there are any Netflix shows to recommend. One followers @oldrustycleaver at first intended to tease Imma, commented with "Sand dunes lol." Nevertheless, when Imma seriously replied to that comment, "I don't think it's on my Netflix but will check it [face blowing a kiss]", this follower immediately corrected his answer and tried to explained,

This is a joke. Rephrasing the phrase "Send nude". As for the views, watch the movie "1917" if you haven't seen it yet. I watch it yesterday, and artillery still rattles in my heart.

Different from real human influencers, Imma interacts with followers on a more frequent basis via comments. When interacting with followers' comments, she adopts a varied speaking style in accord with specific contents, such as using emoji with flexibility like a real cute girl, which perplexes her followers to a great extend, as @kpoppera.biaah7 argued that "Interestingly, she interacts in comments as if she were a real person."

Secondly, establish the emotional connection with followers. Imma demonstrates her strong empathy by creating a sense of mutual solicitude and support. Specifically, unlike real influencers who mainly focus on their own exquisite life or endorsements, Imma often airs her view on eternal themes of human beings or hot topics on social media, persuading followers to believe that they share similar attitudes and beliefs with Imma, which greatly increases the likelihood of perceiving her as real girl. Take "#BLACKLIVESMATTER" movements for instance, she actively gave her voice to this hot issue with three consecutive posts, and one of them contented that,

Enough is enough. I am posting this because I love you all and I want to believe, I need to believe that every life matters. We need to stop this hate. I want to spread positivity but I also understand

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how people suffered and waited enough. I can't be silent anymore. Let's all make action. Love your neighbor. No more hate.

When fans perceive similar opinions, they will form a closer emotional connection with media characters and then more positive in engaging in interaction [12][37]. Similarly, when coronavirus broke out worldwide, Imma attempted to build up a sense of unity to fight against together and they were faced with same difficult situations. Like normal human beings, she also encountered the problem of selling out masks. As one of her followers reminded her that the type of mask she was wearing in a photo didn't work and she should change to medical masks or N95 masks as soon as possible, then Imma replied in a tone of resignation that she had no access to buying qualified masks in such tough circumstance.

Thirdly, "invades" the real world. On the one hand, Imma implants real-world experience into her daily posts, making the veil between real and virtual a little thinner. It is worth noting that most of her daily photos indicate an underlying context, thus prompting followers to supplement particular social situation by means of imagination based on their real life experience, which in turn strengthens the narrative authenticity of her photos. On the other hand, Imma has constructed multi-dimensional relationship structure interacting, allowing her to have a social network similar to real human. In micro-level relationship structure, Imma constructs triple identities: as a friend to both real and virtual human beings, as a fan of other celebrities and as an elder sister of her younger brother. The process of construction is in an orderly way. At first, she posted a photo featuring a thinking gesture in a pub with caption "What a serious talk(フゥッでぃなーで真面目トークなう)", which introduced initial relationship network obliquely. Subsequently, she posted a picture with a real influencer for the first time, Kozue, in which Kozue hugged her while she seemed to be a little timid. But soon, in the second photo she posted, she tended to be more comfortable and even tried selfie with Kozue. This shift from shyness to openness in a friendship also coincides on the most common occasions when human beings first meet each other, thus enhancing her authenticity. On the other hand, Imma utilizes interaction with her virtual friends, such as Ria, to improve followers' awareness of her virtual identity, which can lead to confusion rampant despite her declaration of her virtual identity. Besides, by showing her appreciation of some artists, designers and so on, Imma also puts herself in the position of a fan in the relationship structure, like most people do. For example, she posed together with Tom Sachs and said, "I'm a big big fan of his artworks.", just like what her fans treat herself. This kind of fan alike mentality amplifies the possibility of Imma's followers perceiving shared similarities. Additionally, family bond is the most prominent relationship in micro level. Imma delineates sibling relationship into structure. When Imma firstly introduced her younger brother@plusticboy, she teased about him, "My little brother is rather clumsy. Please take care, thank you (かなり不器用な弟なんだけどよろしくね)." It expands the other side of Imma as an elderly sister. Although in most cases, Imma tend to bicker with her brother, she also displays the love with her brother in the interaction, such as playing "Geistesblitz" games and go to the exhibition together. And they often help each other to promote new endorsement. This kind of easy and real interaction mode between brother and sister is attributable to drive followers to neglect the false essence of family relationship and explore more. For instance, when Imma didn't show her interaction with her brother for some time, one of her followers @watashi_tarun_senpai asked, "Where's plustic boy??" And Imma replied "We talked over the phone the other day and he said he is doing well [face with tears of joy]."

In medium-level relationship structure, Imma incorporates working relationship into her social network which strengthens her identity of an influencer similar to her flesh and blood counterparts. It makes sense that as a model and social media influencer, Imma's daily life is almost infused with social intercourse at work level as Imma frequently shows her routine work scene. For example, when

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Imma was taking publicity photos in collaboration with SK-II, she released a photo with her eyes gazing over and told her followers "I looked a bit tired from the long consecutive shoots." This aids followers to develop a direct emotional resonance with Imma about work fatigue, like @shacho2018.9.21 commented that,

You've been working hard. It seems that you look very tired due to continuous shooting recently as you got a lot work to do. So I guess this period must be very hard for you and your agent. Please keep fighting.

The weather is getting colder, please take care of yourself. The tide of times is changing faster and faster, and though there are many people around you, you have so few people whom can talk with. I think you will be more and more busy, but please take a good rest whenever you want to. If you work too hard, your body will tire out though I don't know if that's going to happen.

In macro-level relationship structure, Imma places an emphasis on her relationship role in the social and culture context. For example, she went to visit Enoshima Shrine, where is known as a "power spot" especially for girls, and said a prayer with folded hands in a photo. Created by a Japan company, Imma, who is interested in Japanese culture, carries on distinct Japanese attributes as she sometimes engages in traditional Japanese culture activities wearing elegant kimono, manifesting her cultural identity.

Building on above analysis, it can be seen that from the perspective of relationship structure, Imma constructs mixed identities by situation narration in daily life. According to different occasions, Imma will put emphasis on certain side of identity. Therefore, the relationship structure is dynamic in mutual correlation and penetration.

3.1.2. Followers' three cognition schemes

The identity of virtual influencers are constantly reshaped in the interaction. As a result, followers don't share a completely agreed cognition of Imma. It can be found that there are several cognitive schema models pertaining to the nature of Imma, including rationality, confusion and entertainment. In rationality cognition schema, followers have exact cognition about Imma's virtual identity and try to apply their knowledge to define or explain the essence of Imma. For instance, @dalva.xoxo commented on one of Imma's post featuring her selfie, "Computer generated girl[laugh]". Moreover, some followers are well aware that the way she presented is manipulated by a company. For example, a fierce debate occurred when Imma post a full-length photo with partial nudity, rational followers argued that such critical comments did not make sense, as one of them explained,

First this is clearly a post about her being a robot, a fictional code if i may say. Second she doesn't even exist, and what if she wants to appear(partly) naked, her/their creators choice, it's her profile for god's sake, unfollow if u don't like her content, don't force your preferences on them.(@rosarioof)

A few followers even go deeper into real and virtual, as they contend that "Everyone is virtual on Instagram(@knoxfrost)". For rational followers, their cognition of Imma's virtual identity prompts them to focus more on the marvel of technology and the meaning of content she posted on Instagram.

In confusion cognition schema, followers are struggling with the nature of Imma whether she is real or true. The confusion cognition is expressed through three emotions: curiosity, shock and expectation, which essentially arises from inconsistency between visual reality and cognition reality. Visually, Imma bears such striking resemblances to human beings, such as eyes color, skin texture and face expressions, that followers cannot believe her virtual identity. For example, as @theraj._ said that "Ive never been this confused in my life.[flushed face]". Moreover, a few followers even firmly convince that there is a real girl behind the screen, as@theleeeffect put forward, "only the head. Rest of the body is from models.". Out of curiosity, many followers keep asking whether Imma

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is real or not, after receiving the clear answer, cognitive dissonance arises. This conflict leads to their shocked emotion, yet the visual reality prompts them still to expect Imma to be real, at least in partially real.

In entertainment cognition schema, followers are not obsess about boundary of Imma's identity between virtual and real. Instead, they perceive her identity in an entertaining perspective and regard her as the real social media influencer, showing interests in common aspects such as her looks and outfits. For example, when it comes to constitute of Imma, @ghadeerbts and @uglyboi_85 said "candy" and "sexiness". And some of them look to Imma as a "unique individual" and show their admiration to Imma, with comments like "それはとても美しい (you're so beautiful.@alikhan_abdraman)".

3.2. The nature of interaction relationship

The interactive capabilities of Instagram has enabled followers, who interact with Imma on a frequent basis, to establish parasocial relationship as if they perceive Imma as part of their social network in reality. Parasocial relationship is generally controlled by Imma's followers as followers themselves take the initiative in forming and developing parasocial interactions with her.

Featuring aesthetic vision, Instagram provides followers with easy access to create first impression of Imma, leading to trigger their curiosity of Imma who claims to be virtual but with highly fidelity, which signifies the start of interaction. It seems to differ from parasocial interaction between human influencers and fans as Aytulun and Sunal [23] argue that fans initiate interaction primarily out of appreciation. In most cases, followers tend to probe the true identity of Imma driving by confusion and novelty factors, though Imma has acknowledged her virtual identity in the profile. However, it is in such a manner that allows followers to increase feelings of closeness with Imma through constant parasocial interaction as time passes by, which turns out to form an imaginary relationship with Imma. Through following, liking and sharing,etc, followers perceive more similarities with Imma, such as same hair style, sibling relationship and shared perspective to green issues, which in turn motivates them to seek out further interactions. As previous studies [22][23] suggest, the more a fans perceives shared similarities, the more likely they are to form parasocial interaction.

Moreover, researchers [29][35][36] found that parasocial interaction in the context of social media is characterized as one-sided. I propose the same applies to the relationship between Imma and her followers as it shares the asymmetrical nature or even more prominent in terms of "the simulacrum of conversational give-and-take" [2]. That's to say, although fans mostly engage in one-way interaction with human influencers, it's still noteworthy that responses directly received from influencers is somewhat mutual interaction as well, whereas the virtual essence of Imma determines that the seemingly immediate or frequent interaction between Imma and her followers is a sheer illusion. As a virtual influencer, Imma do not or even cannot have the true awareness of her or followers' existence in essence even if she pretend to act like she"knows".

Nevertheless, the relationship is still real in the eyes of Imma's followers as one of them said,

You deserve It Imma Girl. Not all Celebritys or even the famous one gonna pay attention 2 me 2 reply. 4 me one reply enough ALREADY. im so happy me when i recieve a mgs coming from. and im not expecting in every post, i comment and ill wait for the reply or even liked. Ill be Happy to support all your project and etc... THATS ALL.

It can be argued that followers' reoccurring exposure to Imma can lead to strong bond of closeness with Imma. The outcome can be even profound if Imma applies a more frequent and direct one-to-one way of dialogue, which prompts followers to perceive Imma as being intimate friends, sisters or imaginary girlfriend. This corresponds to the finding of Chung, Cho and Labrecque [3][27] that personal and intimate conversation allows consumers to have greater feelings of intimacy with the

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celebrity. Despite the faux identity of interaction and relationship between Imma and her followers, the sense of connection and intimacy is real towards followers.

4. Conclusion

This study examined the identity construction course of virtual influencers and accounted for interaction between virtual influencers and their followers. It can be seen that the internal structure and boundary cognition of real and virtual has been reshaped in virtual influencers' parasocial interaction with their followers in a repeated and constant manner. Specifically, it can be divided into two cognition blocks around virtual-real boundary, including the identity of virtual influencers and the relationship between with their followers. In regard to cognition of virtual influencers' identity, virtual influencers demonstrate their virtual identity attribute as CGI human beings. However, in a complex range of engagement practices with followers, virtual influencers have achieved to construct, blur and transcend virtual-real boundary. As a result, followers cannot reach a shared cognition with respect of the virtual essence, instead there are three cognition schemes established: rational scheme, confusion scheme and entertainment scheme, which are diversified and somewhat conflicting with each other. It should noted that the root of above phenomenon is that as a mixture embodiment of virtual and real, virtual influencers is a unique visual spectacle based on peculiar coupling of CGI technology and social media, determining that real and virtual are integrated while separated, complementary while also restricted. In other words, both virtual influencers and their followers are manipulated to wander around virtual-real boundary. As for virtual influencers' relationship with followers, the driving force of existence and development of virtual influncers lies in the connection with fans supported by creating parasocial interaction. Although the intimate and imaginary relationship is essentially serve to commercial interests for virtual in the view of virtual influencers and their companies, there is no denying that for followers, the feelings of emotional resonance, strong intimacy and connection is real in a sense as they perceive virtual influencers as friends or close relations.

Therefore, go back to our research questions about virtual and real in the context of social media times. Virtual influencers subvert the traditional concept of real and virtual. The real formed from parasocial interaction between virtual influencers and their followers is no longer an illusion but becomes more real than reality. The real conception should not be limited to its materiality, that is to say, not only the physical and material things can be seen as real, just as the real embodied by virtual influencers by virtual of internal digital operation of the computer. There is a photorealistic element in presented image in a sense and the image itself generated by information technology also exists in the form of binary code. Besides, when virtual-real boundary around virtual influencers' identity is suspended and dissolved by virtual of parasocial interaction, the boundary is "dying" and then it makes no sense about it for followers. On the other hand, casting the controversy about real and virtual, followers turn their concentration on establishing and developing relationship with virtual influencers, from which they realize close parasocial interaction with real feelings in their hearts, thereby further eliminating the contradiction between real and virtual. Therefore, I'd like to argue that the intimate illusion stressed by the original parasocial interaction theory needs to be re-examined in terms of the appearance of virtual influencers. Because from another perspective, the emotion existing in the hearts of followers is real, although it is kind of different from the material or entity form. Thus, it is the emotional perception that is the core of interaction and relationship between virtual influcenrs and followers rather than virtual-real boundary.

Additionally, this study extends the applicable fields of parasocial interaction.Traditionally, parasocial interaction theory regards interaction as a one-way process of engagement practice as previous researchers contended. In the context of former studies, for fans, individuals are guided to respond to and imagine interaction with virtual influencers, while the human influencers themselves

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obtain independent but closed discourse although they seemingly create the illusion of interaction, they actually refuse the mutual interaction. Therefore, the interaction mechanism is considered as pure faux and imagination. However, as the technology and media landscapes are rapidly changing, we can found that the interaction between virtual influencers and followers has converted from one-side subject acts to mutual connection at least in form.

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