VIRTUAL INFLUENCER MARKETING: ANTHROPOMORPHISM AND ITS EFFECT

Ehsan Dabiran
Carleton University, ehsandabiran@cmail.carleton.ca

Fang Wang
Wilfrid Laurier University, fwang@wlu.ca

Samira Farivar
Carleton University, samira.farivar@carleton.ca

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ANTHROPOMORPHISM AND ITS EFFECT

Research in Progress

Ehsan Dabiran, Carleton University, Ottawa, Canada, ehsandabiran@cmail.carleton.ca
Fang Wang, Wilfrid Laurier University, Waterloo, Canada, fwang@wlu.ca
Samira Farivar, Carleton University, Ottawa, Canada, samira.farivar@carleton.ca

Abstract

Virtual influencers, computer-generated characters who are followed by many social media users, are increasingly contracted to endorse products and brands. However, little research has examined their effectiveness in influencer marketing. Filling this gap, we study anthropomorphism, an important feature of virtual influencers, and its role in virtual influencer marketing. Particularly, drawing from the marketing literature, we study four anthropomorphic elements, appearance, moral virtue, cognitive experience, and conscious emotionality, and their effects on followers’ purchase intention. These effects are modelled via the mediation of parasocial relationship with and perceived credibility of virtual influencers. Influencer-product congruence is posited as a moderator on the links between two mediators and purchase intention. An online survey will be conducted to test our hypotheses. This research extends the influencer marketing literature by exploring virtual influencer features and their effects on marketing effectiveness and provides knowledge on the anthropomorphism design of virtual influencers.

Keywords: Virtual Influencer, Anthropomorphism, Parasocial Relationship, Intention to Purchase.

1 Introduction

Influencer marketing, i.e., marketing via social media influencers, has quickly grown to be a major marketing technique in the past few years. The influencer marketing industry market size was $9.7 billion in 2020 and is expected to grow to $15 billion by 2022 (Statista, 2021). According to a report of The Guardian, the top ten influencers on Instagram are earning more than $1 million per advertisement post (Sweney, 2021). Brands take advantage of influencers’ fame and popularity to market their products and enhance brand images.

Common social media influencers are real individuals who post original content on social media to share their stories and opinions and to attract and retain followers. However, influencers do not have to be real individuals. Virtual influencers are computer-generated characters with a wide following on social media. These characters are designed by artists and marketing teams and establish their identity and personality via their posts. Compared with human influencers, virtual influencers have no physical or technical limitations and are easy to manage. They are increasingly contracted for influencer marketing by brands, including world-class ones such as Samsung, Calvin Klein, Chanel, Coach, Balenciaga, and Prada (Arsenyan and Mirowska, 2021; Robinson, 2020).

Instagram alone has more than 125 active virtual influencers, and there are a lot more on other social media (Huang, 2020). For example, Miquela (@lilmiquela) is a popular virtual influencer with 3 million followers on Instagram, 3.2 million followers on TikTok, and 1.2 million on Facebook. Since 2016, Miquela has introduced herself as a fashionista, singer, and civil rights warrior to create her identity and increase visibility, influence, and emotional release (Block and Lovegrove, 2021). She has collaborated
with well-known brands, such as Chanel, Coach, Balenciaga, Prada, Samsung, and Calvin Klein. As reported by Bloomberg, Miquela has earned more than $11 million in 2020 for her creator, Brud Company (Ong, 2020).

The current influencer marketing literature has largely focused on real-person influencers (Casaló et al., 2020; Farivar and Wang, 2021; Vrontis et al., 2021). These studies examined various elements in influencer marketing communications, such as influencer features, content attributes, psychological factors, and sponsorship disclosure, and their effects on consumer outcomes (Farivar et al., 2021; Vrontis et al., 2021). For example, influencer features, such as physical attractiveness (Lee and Watkins, 2016; Sakib et al., 2020), prestige (Ki and Kim, 2019), and popularity (Ladhari et al., 2020), play important roles in affecting influencer marketing effectiveness. The literature identifies several plausible psychological mechanisms, among which parasocial relationship, the unidirectional emotional bond followers perceive with influencers, is a key one (Farivar et al., 2021; Hu et al., 2020; Lee and Watkins, 2016; Sokolova and Kefi, 2020; Yuan et al., 2021).

These findings on human influencers shed light on understanding virtual influencers in influencer marketing. However, virtual influencers differ from human influencers by some distinct features. One of the most visible and catching ones is their varying levels of anthropomorphism. That is, virtual characters occupy a wide range of humanlike characteristics—some characters can be easily identified as computer graphics, while others look realistic and can be easily taken as real human beings (e.g., imma-@imma.gram, Bermuda-@bermudaisbae). Followers are aware that virtual influencers are "inhuman" in nature, however, previous studies on anthropomorphism in the IS literature have indicated that the different levels of anthropomorphism can affect audience/users' reactions (Banks and Bowman, 2016; Hartmann, 2008; Whang and Im, 2021). Applied in the context of influencer marketing, this means that the anthropomorphism of virtual influencers may affect their marketing effectiveness. Nevertheless, as virtual influencer marketing is a newly emerged area, the anthropomorphism of virtual influencers has not been studied for its effects on marketing outcomes.

This research intends to introduce virtual influencers into influencer marketing research and examines the effect of anthropomorphism. Specifically, it draws from the literature of anthropomorphism and influencer marketing to study the effects of four anthropomorphic features, namely appearance, moral virtue, cognitive experience, and conscious emotionality, on followers' purchase intention, via mediations of parasocial relationship with and credibility of virtual influencers. It further studies the moderation effect of influencer-product congruence on the links of parasocial relationship and credibility to purchase intention. An empirical study of an online survey will be conducted to test the hypotheses.

This research develops virtual influencer marketing research. It links influencer marketing literature, anthropomorphism research, and the avatar marketing theory to identify key anthropomorphism dimensions that affect influencer marketing effectiveness and explain these effects through key mediators of parasocial relationship and credibility. The empirical findings can enhance our understanding of the anthropomorphic design in the virtual influencer context and its marketing effects, contributing to knowledge development in this new domain of research and providing actionable guidelines to creators of virtual influencers and marketers who contract them.

2 Theoretical Background

2.1 Virtual influencer

Virtual influencers are a relatively new phenomenon, for which research is only emerging. Most studies have focused on comparing human and virtual influencers. For example, Arsenyan and Mirowska (2021) compared the postings of and reactions to virtual and human influencers, reporting virtual influencers receive lower positive reactions compared to human influencers. Analysing Miquela, Robinson (2020) argues that there is no significant difference between Miquela and "real life" influencers. Similarly, in a case study on Miquela, Block and Lovegrove (2021) suggest that identity intrigue, discordant
storytelling, and emotional release and provocation are her crucial communication strategies. In a qualitative study, Batist & Chimenti (2021) focused on the top four humanlike virtual influencers (Miquela, Imma, Shudu, and Bermuda) and conducted interviews with marketing specialists. They suggested anthropomorphism, attractiveness, authenticity, scalability, and controllability as five important elements in virtual influencers. In another study, using sentiment analyses, Park et al. (2021) examined the reaction of Instagram users to virtual influencers presence. They found a positive relationship between the number of present virtual influencers in a post and the audience's negative comments. Sands et al. (2022) examined the effect of perceived social-psychological distance and influencers' agency on audiences' responses to virtual influencers. According to this study, consumers are equally willing to follow a virtual influencer or a human influencer. Although virtual influencers are generally considered as having lower source trust, they are more likely to evoke word-of-mouth. Furthermore, they found that lack of agency has a detrimental effect on the way customers view virtual influencers. Moustakas et al. (2020) administered a semi-structured interview with six digital media experts to explore the opportunities, challenges, and success factors of virtual influencers. They underscore the importance of storytelling in attracting followers' attention and compare the pros and cons of humanlike vs. cartoonish characters. Drenten et al. (2020), through studying the case of Miquela, introduced the notion of a re-imagined virtual star system as techno-human culture intermediaries. They questioned the significance of authenticity in the influencer industry. Nevertheless, while virtual influencers are increasingly contracted to endorse products and brands to their followers, there are limited empirical studies exploring factors that affect their marketing effectiveness.

2.2 Anthropomorphism

Anthropomorphism refers to attributing human form, characteristics, and behaviour to non-human entities (Złotowski et al., 2014). It is an important feature of non-human entities and has been studied across various applications, such as robots (Mende et al., 2019), chatbots (Go and Sundar, 2019), digital assistants (Al-Natour et al., 2011; Chattaraman et al., 2019), and auto tutors (D'Mello and Graesser, 2010), and in many different contexts, such as medical service (Bickmore et al., 2016), online shopping (Go and Sundar, 2019), and learning (D'Mello and Graesser, 2010). Yet, there is limited research studying the anthropomorphism of social media influencers.

Each scenario presents a unique setting for the applicable anthropomorphic entity, thus has subtle but distinct focuses in study. For example, a commonly studied anthropomorphic feature in visual entities is the appearance (Landwehr et al., 2011). However, the focus of study for chatbots can be anthropomorphism in language and conversation (S. Lee et al., 2020), and that for autonomous vehicles can be the capacity of rational thoughts (J. G. Lee et al., 2015; Watz et al., 2014). Other features studied include anthropomorphic shape of product design (Landwehr et al., 2011), voice of digital assistants in service encounters (Fernandes and Oliveira, 2021), and emotionality of consumer robots (Kim et al., 2019). A recent conceptual article on avatar marketing proposes to focus on form realism and behavioural realism to assess and categorize avatars and align the two to enhance avatar effectiveness in marketing (Miao et al., 2021).

Anthropomorphism can arouse various audience/user responses, positive or negative or both. Spexard et al. (2006) find that increasing the human-likeness of robots by using two cameras as a robot's eyes and two microphones as its ears result in engaging the robot in interaction with humans similar to human-human interaction. Similarly, many studies report that humanlike features promote human-robot interactions (Airenti, 2018; Feil-Seifer and Matarić, 2011) and increase emotional bonding (Fasola and Matarić, 2012). Van Doorn et al. (2017) developed the concept of automated social presence; the extent technology causes customers to feel the presence of another social entity. However, human-likeness can sometimes trigger a repulsive feeling, as suggested by the uncanny valley hypothesis (MacDorman et al., 2009). That is, an almost human-looking robot may seem overly staged to some audience, producing a feeling of uncanniness (Kim et al., 2019; MacDorman et al., 2009).
3 Research Model and Hypotheses

Virtual influencers are anthropomorphic entities, and their varying level of human likeness is one of their significant features. This research studies the effect of anthropomorphism of virtual influencers on their marketing outcomes. In the marketing literature, brand anthropomorphism research has developed and validated four dimensions of brand anthropomorphism—appearance, moral virtue, cognitive experience, and conscious emotionality (Golossenko et al., 2020). Drawing from this stream of research, we study the effects of these four dimensions of anthropomorphism on influencer marketing outcomes as reflected by followers' intention to purchase. We posit these effects through the mediation of parasocial relationship with and perceived credibility of virtual influencers perceived by followers.

Parasocial relationship was first introduced by Horton & Wohl (1956) and refers to audiences' unidirectional emotional bond with media characters (Hu et al., 2020). It explains the audience's relationship with well-known persons such as sports athletes (Sun & Wu, 2012), Musicians (Krause et al., 2018), and television characters (Bond, 2021). Parasocial relationship is a critical mediation mechanism identified in the influencer marketing literature (Casaló et al., 2020; Farivar et al., 2021; Sokolova and Kefi, 2020). Credibility, the degree of dependability and reliability of a subject (Rogers and Bhowmik, 1970), is a common, critical construct in influencer marketing (Lou and Yuan, 2019), which importance can be further elevated in the virtual influencer context because virtual influencers are "unreal". Followers generally know that these virtual influencers are created for commercial purposes, and lack of authenticity and reliability is a major concern with virtual influencers (Moustakas et al., 2020). As such, credibility is an important factor to consider. Parasocial relationship and credibility have been used as the key mediation mechanisms to study the effects of human influencer features, such as physical attractiveness, social attractiveness, and attitude homophily, on purchase intention (Sokolova and Kefi, 2020). Similarly, we consider them as the key mediators between the anthropomorphic features of virtual influencers and marketing outcomes. Figure 1 provides the research model and outlines the hypotheses to be tested.

Marketing research on anthropomorphism emphasizes both form and behavioural realism (Miao et al., 2021). The brand anthropomorphism scales developed recently validated four elements, one being appearance and the other three (i.e., moral virtue, cognitive experience, and conscious emotionality) being behavioural (Golossenko et al., 2020). Applied to the virtual influencer marketing context, appearance anthropomorphism refers to the perception of superficial humanlike traits such as morphological similarities. Moral virtue refers to the tendency of audiences to perceive a virtual influencer as a moral entity. Cognitive experience measures the perception of a virtual influencer as a moral entity. Cognitive experience measures the perception of a virtual influencer's ability to engage in various cognitive tasks, such as showing free will, thinking, and reasoning. Finally, conscious emotionality refers to the perception of a virtual influencer as being able to experience cognitively complex emotions, such as guilt and shame.

![Figure 1. Research model.](image)
We posit that the four anthropomorphic features of virtual influencers can affect the parasocial relationship with and credibility of virtual influencers perceived by followers. This relies on the fact that the level of realism and authenticity facilitate the development of parasocial relationship and perceived credibility (Giles, 2002; Hoffman et al., 2021). The development of parasocial relationship involves emotional investment. In a study on player-avatar interaction, Banks and Bowman (2016) report that seeing avatars as having humanlike autonomy, compared to seeing them as an object, evokes higher emotional investment from players. The association between humanlike characteristics and parasocial relationship has been reported in previous studies such as on voice assistants (Whang and Im, 2021). In addition, as anthropomorphized agents are likely to feel more real and authentic, they are perceived with more credibility (Banks and Bowman, 2016; Hartmann, 2008; Whang and Im, 2021). This is shown in previous studies such as on avatar (Hartmann, 2008). We test:

**H1-H2:** Anthropomorphism in the appearance of virtual influencers positively affects (H1) the parasocial relationship and (H2) the credibility of virtual influencers perceived by followers.

**H3-H4:** Perceived moral virtue of virtual influencers positively affects (H3) the parasocial relationship and (H4) the credibility of virtual influencers perceived by followers.

**H5-H6:** Perceived cognitive experience of virtual influencers positively affects (H5) the parasocial relationship and (H6) the credibility of virtual influencers perceived by followers.

**H7-H8:** Perceived conscious emotionality of virtual influencers positively affects (H7) the parasocial relationship and (H8) the credibility of virtual influencers perceived by followers.

Parasocial relationship with and credibility of virtual influencers perceived by followers can affect their purchase intention. The marketing literature shows that consumers' feeling of intimacy with influencers positively affects consumers' brand perception, which increases customers' purchase intention (Colliander and Dahlén, 2011; Lee and Watkins, 2016). The link between parasocial relationship to purchase intention has been widely tested and reported in extant influencer marketing research (Sokolova and Kefi, 2020; Yuan et al., 2021).

Furthermore, research on source effect theory has considered and examined credibility as a key factor determining the effectiveness of communication (Erdogan, 1999; Herr, 2006). Messages from a credible source can be better accepted by audience (Alasuutari et al., 2012; Gunawan and Huarng, 2015; Lou and Yuan, 2019; Sokolova and Kefi, 2020). The effect of credibility on purchase intention has been evidenced in prior influencer marketing research (Reinikainen et al., 2020; Sokolova and Kefi, 2020). For example, it is reported that influencer credibility can affect brand trust (Reinikainen et al., 2020) and purchase intention (Sokolova and Kefi, 2020). We test:

**H9:** Perceived parasocial relationship with virtual influencers positively affects followers' purchase intention.

**H10:** Perceived credibility of virtual influencers positively affects followers' purchase intention.

The congruity theory (Osgood and Tannenbaum, 1955) asserts that individuals favour entities that are cognitively consistent with each other. Congruence is an important topic in marketing and advertising research, which finds that endorser-product congruence improves marketing effectiveness (Kahle et al., 1985). That is, the right endorser and product/brand matchup can induce a favorite audience response. Congruence has been studied in recent influencer marketing research (Belanche et al., 2021; Zhu et al., 2021). For example, Belanche et al. (2021) suggest that influencer-product congruence affects follower-product congruence and then follower attitude towards the endorsed product and purchase intention. For this study that focuses on virtual influencer features, we consider influencer-product congruence as a moderator that interacts with parasocial relationship with and credibility of influencers in affecting purchase intention. We test:

**H11-H12:** Influencer-product congruence positively moderates the effects of (H11) parasocial relationship and (H12) perceived credibility on followers' purchase intention.
4 Proposed Methodology

An online survey will be conducted to test the research model and hypotheses. Respondents will be followers of these three virtual influencers: Miquela, Guggimon, and Nobody Sausage. The reasons for focusing on these specific influencers are: 1. all three actively collaborate with brands, and 2. they have various levels of anthropomorphism; Miquela is more human-like, is a singer, releases music videos, and proposes herself as a warrior for human rights. Guggimon is a fantasy creature; his face is animal-like. Nobody Sausage looks like a sausage.

Respondents of the survey will be randomly assigned to see one of the product endorsement ads of the virtual influencer they have been following and will be asked to answer the survey questions accordingly. Figure 2 shows our designed product endorsements ads. All measurements are adapted from the literature and adjusted to this context of research. Table 1 shows the measurement items.

To ensure the validity and reliability of the measurement items, first, a pilot study will be conducted with a sample of 50 followers of an Instagram virtual influencer. Then we will collect data from followers of three specified virtual influencers with the help of a reputable research firm; Qualtrics. We target to collect 480 respondents: 160 responses from followers of each influencer (80 responses for each designed advertisement). Following the online survey, an analysis will be conducted using the SEM technique via AMOS to test the proposed hypotheses. The multi-group analysis will be conducted to test potential cross-group differences.

### Table 1

<table>
<thead>
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<th>Influencer</th>
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<tr>
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<td>Nobody Sausage</td>
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To validate the measurement items, first, a pilot study will be conducted with a sample of 50 followers of an Instagram virtual influencer. Then we will collect data from followers of three specified virtual influencers with the help of a reputable research firm; Qualtrics. We target to collect 480 respondents: 160 responses from followers of each influencer (80 responses for each designed advertisement). Following the online survey, an analysis will be conducted using the SEM technique via AMOS to test the proposed hypotheses. The multi-group analysis will be conducted to test potential cross-group differences.

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Figure 2. Product endorsement ads of virtual influencers.

<table>
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<tr>
<th>Constructs</th>
<th>Measurement Items</th>
<th>References</th>
</tr>
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<tbody>
<tr>
<td>Anthropomorphic appearance</td>
<td>1. This influencer looks humanlike.</td>
<td>Golossenko et al., 2020; Bartneck et al., 2009</td>
</tr>
<tr>
<td></td>
<td>2. This influencer is life-like.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>3. This influencer has a humanlike appearance.</td>
<td></td>
</tr>
<tr>
<td>Moral virtue</td>
<td>1. This influencer is trustworthy.</td>
<td>Golossenko et al., 2020; Haslam et al., 2008</td>
</tr>
<tr>
<td></td>
<td>2. This influencer is honest.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>3. This influencer is principled.</td>
<td></td>
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<tr>
<td>Cognitive experience</td>
<td>1. This influencer can engage in a great deal of thought.</td>
<td>Golossenko et al., 2020; Waytz et al., 2010</td>
</tr>
<tr>
<td></td>
<td>2. This influencer can imagine things on his/her own.</td>
<td></td>
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<tr>
<td></td>
<td>3. This influencer is capable of reasoning.</td>
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<tr>
<td>Conscious emotionality</td>
<td>1. This influencer can experience remorse over actions that s/he deems to be shameful.</td>
<td>Golossenko et al., 2020; Demoulin et al., 2004</td>
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<td></td>
<td>2. This influencer can experience compassion for people who feel down.</td>
<td></td>
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<tr>
<td></td>
<td>3. This influencer can experience guilt when s/he hurts someone with his/her behaviour.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>4. This influencer can experience shame when people have negative views and judgments about him/her.</td>
<td></td>
</tr>
<tr>
<td>Parasocial relationship</td>
<td>1. When I am watching/reading the posts of this influencer, I feel as if I am part of his/her group.</td>
<td>Farivar et al., 2021; Sakib et</td>
</tr>
</tbody>
</table>
2. I think this influencer is like an old friend.
3. I would like to meet this influencer in person.
4. This influencer makes me feel comfortable as if I am with friends.

Credibility
1. I find this influencer expert in his/her domain.
2. I find this influencer efficient in his/her job.
3. I find this influencer reliable.
4. This influencer is credible.
5. I think this influencer cares about his/her followers.
6. This influencer regularly updates his/her content.

Product-influencer congruence
1. The influencer has a good match with the product.
2. The compatibility between the influencer and the product is high.
3. The alignment between the influencer and the product is high.
4. The influencer and the product have a high fit.

Intention to purchase
1. I plan to buy the product that the influencer has promoted.
2. I desire to buy the product that the influencer has endorsed.
3. I am likely to buy the product that the influencer has recommended.

Table 1. Measurements.

5 Conclusions and Discussion

Virtual influencers, with their appearance and behavior carefully crafted by professional designers, are gaining popularity on social media, and generating high engagement from their followers. They are increasingly favored by marketers for product/brand endorsement. This research is among the first to study virtual influencers for their marketing effectiveness. Particularly, it focuses on the anthropomorphism of virtual influencers and proposes that four anthropomorphic features of virtual influencers, including appearance, moral virtue, cognitive experience, and conscious emotionality affect the purchase intention of followers through enhancing parasocial relationship and credibility. Further, product-influencer congruence moderates the effects of parasocial relationship and credibility on purchase intention. An empirical study with an online survey will be conducted to test the proposed relationships. This research brings virtual influencers into influencer marketing literature and provides new opportunities for further research. The empirical results can inform designers in creating virtual characters with higher performance and benefit brands to choose appropriate virtual influencers for their marketing campaigns.

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