Virtual influencer marketing: the good, the bad and the unreal

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Abstract

**Purpose** – The purpose of this article is to conceptualize virtual influencer marketing, outlining the opportunities and dangers associated with using virtual influencers in social media marketing communications.

**Design/methodology/approach** – Drawing on the literature addressing influencer marketing and interactions between consumers and technologies, this article introduces the landscape of virtual influencer marketing.

**Findings** – This article distinguishes virtual influencers from real-life influencers and related digital characters. It further defines four unique elements attributed to virtual influencers: customization, flexibility, ownership, and automation. Finally, it introduces a taxonomy for virtual influencers.

**Research limitations/implications** – The conceptualization of virtual influencer marketing contributes to advancing the understanding of the (virtual) influencer marketing landscape.

**Originality** – This article makes three contributions. First, it conceptualizes virtual influencer marketing by defining and critically evaluating the key characteristics attributed to virtual influencers. Second, it offers a 2×2 taxonomy of virtual influencers, grounded in research on anthropomorphism and reality-virtuality. Third, this article reflects on the opportunities and dangers associated with virtual influencer marketing, outlining avenues for future research.

**Practical implications** – This article suggests that brands need to carefully evaluate the different characteristics of virtual influencers, when deciding to leverage them in social media marketing communications. It also provides guidelines for working with virtual influencers in marketing campaigns targeted at consumers.
Social implications – This article discusses ethical and social implications for brands and consumers that interact with virtual influencers in the encounter between reality and virtuality.

Keywords – Virtual influencers, influencer marketing, anthropomorphism, reality-virtuality

Paper type – Conceptual Paper
Introduction

With recent technological developments, communications between consumers and non-human characters, such as digital agents and service robots, are increasingly common (Miao et al., 2022; Davenport et al., 2020). This article attends to communications involving non-human characters that have posited much controversy in marketing research – virtual influencers (Franke et al., 2023; Sands et al., 2022b). Virtual influencers are digital characters attributed to particular social media profiles created and managed by individuals, digital agencies, or brands (e.g., see Guthrie, 2020; Sands et al., 2022a). Similar to real-life (human) influencers, virtual influencers can establish relationships and engage with a large number of consumers on social media (Hugh et al., 2022; Leung et al., 2022a). As millions of consumers interact with virtual influencers across different social media platforms, many brands, including Balenciaga, Samsung, and KFC, are interested in leveraging these digital characters to promote products and services (Conti et al., 2022; Guthrie, 2020).

Virtual influencers can take different forms and shapes ranging from unimaginable characters that look like simple drawings to hyper-realistic characters that can be nearly impossible to distinguish from real-life (human) influencers (Aggerwal and McGill, 2007; Delbaere et al., 2011). In addition, while some of these digital characters appear to exist in a virtual world, others create an illusion of living in the physical world, blurring the lines between reality and virtuality (Arsenyan and Mirowska, 2021). However, extant research provides limited insights regarding who virtual influencers are and how they can be effectively used by brands in social media marketing communications. Besides, little is known about how communications with different types of virtual influencers can affect consumers, especially in negative ways (Appel et al., 2020; Miao et al., 2022).

In this article, we introduce a landscape of virtual influencer marketing by establishing definitional and conceptual clarity of the phenomenon as well as synthesizing academic research and ongoing business practices. In doing so, we attend to the negative implications associated with communications involving virtual influencers, while also pointing out the opportunities that virtual influencer marketing offers (Conti et al., 2022; Sands et al., 2022b). To these ends, we provide three theoretical constitutions to social media marketing research (Appel et al., 2020; Leung et al., 2022a).

First, we conceptualize virtual influencer marketing by distinguishing virtual influencers from other digital non-human entities (e.g., Miao et al., 2022; Werbach and Hunter, 2012) and
identify their four unique attributes (customization, flexibility, ownership, and automation). In turn, we add clarity to the emerging research that looks into communications between these digitally created characters and consumers across different digital platforms (Sands et al., 2022b; Yang et al., 2022). Second, we develop a taxonomy of virtual influencers based on their similarity to human appearance, also known as anthropomorphism (Baldwin, 1982; Mende et al., 2019), and their placement on the reality-virtuality continuum (Hudson et al., 2019; Milgram and Kishino, 1994). In line with the taxonomy, we introduce four distinct categories of virtual influencers — realistic non-humans, realistic humans, unrealistic non-humans, and unrealistic humans — which reflect a more nuanced representation of the virtual influencer marketing landscape. Third, we develop eight propositions about the use of virtual influencers in marketing. Building on these propositions, we outline a research agenda, emphasizing the importance of gaining a deeper understanding of how unique attributes of virtual influencers can be leveraged in effective and ethical ways.

We also discuss practical implications for brands interested in taking advantage of virtual influencers in their social media communications. Drawing upon the proposed taxonomy, we recommend that brands identify different elements of virtual influencers that can contribute to achieving their marketing goals across digital platforms. Finally, we encourage brands to be open with consumers about when and how they use virtual influencers in their marketing communications to assure transparency and trust.

**Virtual Influencers**

Marketing research defines influencers as content creators, who attract the interest of large numbers of consumers on social media platforms (Cocker et al., 2021; Leung et al., 2022a). Influencers are usually known for being experts in particular topics (e.g., travel, lifestyle, makeup) and for creating content carrying different value for consumers (Audrezet et al., 2020; Majid et al., 2019), including educational (e.g., tutorials), entertainment (e.g., funny videos), or inspirational (e.g., ideas for cooking) value, often simultaneously. In addition to their content-making skills, influencers’ popularity is further driven by their ability to build strong connections and trust with consumers by creating a sense of interactive communications and by revealing personal information that consumers can relate to (Ferchaud et al., 2018; Penttinen et al., 2022).

Traditionally, brands collaborate with real-life influencers (i.e., humans living in a physical world) who can make their own decisions regarding sponsored collaborations with brands and
form opinions about the products and services they promote (Schouten et al., 2020). In addition to real-life influencers, brands also work with virtual influencers (Sands et al., 2022b; Thomas and Fowler, 2021). These influencers only exist digitally and cannot have subjective experiences and opinions. In the following, we define virtual influencers and outline how they can be used in social media marketing communications.

**Defining Virtual Influencers**

In this article, we define virtual influencers as non-human digitally created characters sharing social media content and engaging in interactive communications with an aim to obtain influential status among consumers (Sands et al., 2022a; Hugh et al., 2022). Extant research uses several terms when addressing virtual influencers, the most common being computer-generated imagery (CGI) influencers and artificial intelligence (AI) influencers, to stress specific characteristics of virtual influencers. In particular, the term CGI influencer is associated with virtual influencers that are created with computer-generated imagery technology and look similar or identical to real-life influencers (Ahn et al., 2022; Mrad et al., 2022). Meanwhile, the term AI influencer is used to emphasize those virtual influencers that rely on artificial intelligence technologies in creating content and interacting with consumers (Sands et al., 2022a; Thomas and Fowler, 2021). Hence, CGI influencers and AI influencers are essentially specific sub-types of virtual influencers that have unique characteristics and abilities (Appel et al., 2020; Conti et al., 2022).

Virtual influencers are distinct from other popular digitally created characters that brands can leverage in communications with consumers – avatars. The term avatar was initially used to describe in-game visual representations of the player in role-playing games, such as Second Life, which enables players to choose or create their own avatar and interact with other players’ avatars in a virtual environment (Werbach and Hunter, 2012; Kapp, 2012). In recent research, the term avatar is also used to describe “digital entities with anthropomorphic appearance, controlled by a human or software, that have an ability to interact” (Miao et al., 2022, p. 67). In digital environments, brands typically use avatars to perform a variety of customer service assistant tasks, such as answering consumer questions and navigating consumers through their shopping experiences (de Brito Silva et al., 2022; Miao et al., 2022). Avatars can be seen as virtual assistants and chatbots (Crolic et al., 2022) acting on behalf of brands to help consumers deal with different inquiries, rather than content creators connecting with consumers and influencing their attitudes and behaviours toward brands.
Accordingly, we use the term virtual influencers to refer to digital characters that represent brands on social media. We argue that while virtual influencers typically have interactive abilities, their main function is to share social media content and interact with large audiences of consumers, rather than provide customer support.

**Characteristics of Virtual Influencers: The Good, the Bad, and the Unreal**

To advance scientific knowledge, we also need to develop an understanding of what distinguishes virtual influencers as actors that can promote products and services on social media. Based on the review of the extant marketing literature and the practical use of virtual influencers in marketing communications, we attend to the following unique characteristics: customization, flexibility, ownership, and automation. We argue that these characteristics foster the success of virtual influencer marketing and drive consumer interest toward and engagement with virtual influencers on social media. At the same time, we point to several controversial implications that may reflect negatively on brands working with virtual influencers or even cause harm to consumers.

**Customization**

Customization of virtual influencers means that all aspects of their digital existence can be freely decided upon and modified. To illustrate, virtual influencers can be created to have a specific physical appearance, with a particular skin colour, height, and weight (Mustak et al., 2022; Sands et al., 2022b). Similarly, virtual influencers can be assigned to specific background stories (e.g., origin and geolocations) and behaviours (e.g., preferences, opinions, and beliefs) (Conti et al., 2022). Individuals responsible for creating and managing virtual influencers can also select any content for virtual influencers to share, possibly making them experts or opinion leaders on particular topics, such as fashion or travel (Guthrie, 2020). Accordingly, customization allows for designing virtual influencers with attributes that appeal to specific target consumers or fit the values and image of the promoted brands (Conti et al., 2022; Thomas and Fowler, 2021). For example, virtual influencers can be designed to appeal to young women interested in cosmetics or to represent brands that promote sustainable consumption behaviours. Notably, with time, the visual appearances and behaviours of virtual influencers can be modified in accordance with changes in market trends and evolving consumer preferences.

While customization might appear as an attractive characteristic of virtual influencers for brands, it also raises some concerns. Most importantly, the visual appearance of the influencers
can create unrealistic representations of the beauty standards in society, including flawless skin and a skinny body image (Guthrie, 2020; Sands et al., 2022b) and, as a result, make consumers feel anxious about the way they look (Deng and Jiang, 2023). Unrealistic representations of beauty standards can especially be problematic if consumers have difficulties distinguishing virtual influencers from human influencers (Franke et al., 2023), as these consumers do not even realize that they are comparing themselves to a non-human entity. Furthermore, the background stories of virtual influencers, and the content they share, can create false representations of society. For example, similar to real-life influencers, virtual influencers may portray a glamorous lifestyle unattainable for most consumers (Conti et al., 2022). Strong concerns are also associated with the stands that virtual influencers may take regarding societal issues, which can be offensive or even misleading. For example, virtual influencers may support unethical movements, such as violence and racism, in their shared social media content (Ciuchita et al., 2022; Mustak et al., 2022), promoting amoral behaviours in society.

**Flexibility**

In addition to the high level of customization, working with virtual influencers assumes a high level of flexibility. Because of their digital nature, virtual influencers do not have the same constraints as real-life influencers. For example, virtual influencers do not become tired, hungry, or sick (Appel et al., 2020). Moreover, these influencers are not tied to a particular geographical location; on the contrary, they can be placed on a different planet or hypothetical universe. Accordingly, virtual influencers can be anywhere, anytime, and perform any task (Conti et al., 2022). In turn, marketing collaborations with virtual influencers are likely to require significantly less time and financial resources (e.g., associated with travel, makeup artists, etc.) in comparison to working with real-life influencers (Arsenyan and Mirowska, 2021; Sands et al., 2022a). Besides, the digital nature of virtual influencers also allows their seamless transfer to different digital platforms, beyond social media, such as the metaverse (Barrera and Shah 2023; Sands et al., 2022b). This means that consumers can potentially interact with the same virtual influencer across different digital platforms and spaces simultaneously.

However, a high level of flexibility also entails negative implications. Because virtual influencers can go anywhere anytime, they can once again create unrealistic representations of human lives and abilities (Conti et al., 2022; Mustak et al., 2022). For example, consumers can, just as with real-life influencers, feel intimidated or experience the fear of missing out (Dinh and Lee, 2022) when seeing how much virtual influencers travel and how many events
they attend. At the same time, exhibiting overly flexible behaviours that cannot be attributed to humans, may make virtual influencers seem more like robots rather than opinion leaders (Miao et al., 2022). As a result, virtual influencers are likely to appear less authentic and relatable (Sands et al., 2022a), which can hurt the success of virtual influencer marketing campaigns (Hugh et al., 2022; Schouten et al., 2020).

Ownership

Virtual influencers are typically created by AI agencies, media agencies, and individuals skilled in AI and computer graphics. Once virtual influencers are created, they can be owned by the original creators or brands (Conti et al., 2022; Mustak et al., 2022). Typically, virtual influencers owned by creators collaborate with several brands, just like real-life influencers, while brand-owned influencers only advocate for specific brands (de Brito Silva et al., 2022). Ownership of virtual influencers assumes a high level of control, which is particularly important in assuring the reputations of these influencers and the associated brands (de Silva Oliveria and Chimenti, 2021; Thomas and Fowler, 2021). For example, in comparison to working with real-life influencers (Pradhan et al., 2022), collaborations with virtual influencers assume lower risks related to involvement in scandals and unethical behaviours (Guthrie, 2020). However, brands (e.g., Prada and Balmain) are increasingly interested in having their own virtual influencers because such ownership allows to make sure that the appearances, stands, and behaviours of these influencers closely represent a brand’s values and image, also as these brands evolve (Appel et al., 2020; Sands et al., 2022b).

Whilst ownership allows for control and security, it posits several negative issues. Most importantly, although virtual influencers cannot decide to engage in unethical behaviours or scandals, their owners can (Mrad et al., 2022; Thomas and Fowler, 2021). For example, creators of virtual influencers, such as AI and media agencies, can engage in unethical behaviours that project on the influencers they own, and, consequently, on the collaborating brands (Sands et al., 2022a). The owners of virtual influencers can choose to stay anonymous (Ciuchita et al., 2022), which might be problematic as this anonymity allows the owners to exhibit unethical behaviour (e.g., spread misinformation purposefully) through their virtual influencers without being identified or punished. Furthermore, as there can be large misfits between the exhibited appearance and behaviour of the virtual influencer and the owner due to a particular interest (e.g., monetary), the truthfulness and authenticity of recommendations shared by these influencers are highly questionable (Chiu and Ho, 2023; Lou et al., 2023). In the end, virtual influencers can neither have actual experiences with products and services nor
form their own opinions (Conti et al., 2022; Mrad et al., 2022). Instead, they are solely mediums for others to express their experiences and opinions through.

**Automation**

The tasks performed by virtual influencers (e.g., posting content and responding to comments from followers) are typically performed by their managing teams of professionals or even automated with the help of AI (Sands et al., 2022a). Currently, most virtual influencers are primarily managed by teams of humans (Thomas and Fowler, 2021); although, virtual influencers are gradually becoming more and more autonomous (Appel et al., 2020). As a result, virtual influencers increasingly act as brand assistants that provide consumer support, such as handling consumer questions and creating engaging consumer experiences on digital platforms, also in real-time (Conti et al., 2022). Although most such interactions remain text-based, technological advances allow communications between virtual influencers and consumers to gradually move towards being voice- and video-based (Guthrie, 2020). Virtual influencers relying on AI technologies can also help brands collect information about consumer behaviours (Kietzmann et al., 2018). They can further use the collected data to provide solutions for handling different consumer inquiries and even help design brand communications (Appel et al., 2020; Campbell et al., 2020).

Despite clear advantages, the automation of virtual influencers is linked to several negative issues. Most importantly, many consumers currently feel uncomfortable about engaging in communications led by AI technologies (Kamoonpuri and Sengar, 2023; Rajaobelina et al., 2021). This means brands might miss out on the opportunities to reach out to and connect with prospective consumers when leveraging virtual influencers. To continue, there is a danger that owners of AI-based virtual influencers withhold information, making consumers falsely believe that they are engaged in communications with humans. Similarly, owners of virtual influencers may intervene with consumer privacy, when leveraging AI technologies in collecting consumer data from social media engagements (Conti, 2022; Rajaobelina et al., 2021) and using it to persuade consumers to buy products and services (Davenport et al., 2020; Mustak et al., 2022). Finally, there is a danger that AI-powered virtual influencers may be purposefully designed for or tricked into (e.g., by untruthful or low-quality online data) spreading misinformation and other unethical communications (Mustak et al., 2022; see also Kraft (2016) for illustrative example). This can result not only in hurting consumers, but also damaging the reputations of virtual influencers’ owners and associated brands.
**Toward a Taxonomy of Virtual Influencers**

Currently, there are numerous virtual influencers on social media platforms (Sands et al., 2022a; Kim et al., 2023), including those looking similar to real-life influencers, and those looking like creatures that could never exist in the physical world. Drawing on the derived definition of virtual influencers, we propose a taxonomy of virtual influencers that brands can leverage in their social media communications. This taxonomy builds on the physical form that virtual influencers may take, which can be more or less similar to real-life influencers, as well as on whether these influencers appear to exist more in the physical or the virtual world. The proposed taxonomy can be used by academics and managers to identify different elements of virtual influencers that can contribute to achieving specific marketing goals (Appel et al., 2020; Leung et al., 2022b).

*Anthropomorphism and digital characters on social media*

In distinguishing virtual influencers from real-life influencers, the level of anthropomorphism is a useful indicator. Anthropomorphism represents the degree to which non-human digital characters resemble humans in their appearances and/or behaviours (Baldwin, 1982; Brown and Ponsonby-McCabe, 2014). The role of anthropomorphism has been discussed in different contexts of marketing communications, including product and packaging design (Kniazena and Belk, 2012; Triantos et al., 2016), brand humanization (Delgado-Ballester et al., 2019; Wan et al., 2017); and communications with digital assistants (Moussawi et al., 2021; Munnukka et al., 2022). The outcomes of the extant research show that anthropomorphism increases brand liking and purchase intentions (Hudson et al., 2016; Triantos et al., 2020). In addition, highly anthropomorphic digital characters tend to be perceived as more competent and persuasive (Waytz et al., 2010) as well as be more successful in developing relationships with consumers (Crolic et al., 2022; Triantos et al., 2020).

The level of anthropomorphism attributed to digital characters builds on form and behavioural realism. Form realism refers to the extent to which digital characters visually and physically appear as humans (Miao et al., 2022), while behavioural realism refers to the extent to which they act as humans and are perceived as socially intelligent (Fox et al., 2015). Form realism also determines consumer expectations of behavioural realism, meaning that if digital characters resemble humans physically, consumers also expect them to have human behaviours (Miao et al., 2022; Novak and Biocca, 2003). In this article, however, we argue that all virtual influencers assume a high level of behavioural realism, meaning that they exhibit realistic
human behaviours on social media that are similar to real-life influencers. This is because virtual influencers mimic the behaviours of real-life influencers and act primarily as content creators, rather than customer support representatives.

According to the social response theory (Reeves and Nass, 1996; Moon, 2003), consumers tend to apply the same social rules and practices for humans when interacting with digital characters that have human-like appearances or behaviours. Furthermore, consumers might also compare themselves with these digital characters (Ellwart et al., 2022; Franke et al., 2023; Kim and Park, 2023) by self-evaluating themselves as superior (in upwards comparisons) or inferior (in downwards comparisons) to others (Festinger, 1954; Singh and Sharma, 2022). Upwards comparison is particularly relevant in communications with real-life and virtual influencers, who often only portray positive self-images and promote specific beauty and life standards, which can have negative impacts on the self-evaluation of consumers (Aw and Chuah, 2021; Thoumrungroje, 2014). However, downwards comparisons posit relevance too, as consumers find real-life and virtual influencers that share negative experiences to be credible and authentic (Arsenyan and Mirowska, 2021; Ferchaud et al., 2018).

There are also other negative implications associated with the anthropomorphism of digital characters. For example, high levels of anthropomorphism are attributed to violating social norms and rules and evoking the feeling of creepiness (Langer and König, 2018; Olivera-La Rosa et al., 2019). In addition, communications anthropomorphism can lead to the “uncanny valley effect” (Mori, 2012). The uncanny valley effect entails that as anthropomorphism increases, so does affinity up until a certain point. Hereafter, consumers will feel uneasy (Gray and Wegner, 2012; Mori 2012), because of, for example, the evoked feelings of death (MacDorman and Ishiguro, 2006) and threatening the distinctiveness of what it means to be human (MacDorman and Entezari, 2015). Taken together, current research posits much controversy regarding the implications of anthropomorphism (Crolic et al., 2022; Ham et al., 2023).

Reality-virtuality continuum

The reality-virtuality continuum was first introduced by Milgram and Kishino (1994) to explain the relationship between the physical and virtual worlds. This continuum includes reality on the far-left side of the continuum, which represents an environment with only physical objects, and virtuality on the far-right side of the continuum, which displays an environment with only virtual objects. In the middle of the continuum, there is pure mixed
reality, where both physical and virtual objects exist simultaneously, creating an illusion that one is immersed in both worlds simultaneously (Flavián et al., 2019; Javornik, 2016). Mixed reality covers augmented reality (AR), where virtual objects appear to be a part of the physical world, and augmented virtuality (AV), in which objects from the physical world are featured in a mostly virtual environment (Skarbez et al., 2021). Notably, research on mixed reality has been criticized for its broad application which ranges from virtual reality (VR) glasses and console games to meeting in Microsoft Teams and social media platforms (Speicher et al., 2019; Trabelsi-Zogklami and Touzani, 2019). As a result, there is a lack of agreement among researchers regarding what can be considered a mixed reality.

Successful adoption of mixed reality builds on three key factors: interactivity (Javornik, 2016), immersion (Flavián et al., 2019), and presence (Oh et al., 2018). Interactivity refers to the degree to which consumers perceive communication in a mediated environment to be two-way and responsive to their actions (Mollen and Wilson, 2010). Immersion represents “a psychological state characterized by perceiving oneself to be enveloped by, included in, and interacting with an environment that provides a continuous stream of stimuli and experiences” (Witmer and Singer, 1998, p. 227). Finally, presence entails physical presence, or the perception of being present in a virtual environment in person, and social presence, which represents a feeling of being together with other individuals when interacting virtually (Lombard and Ditton, 1997). Immersion and presence assume that consumers experience a feeling of being a part of a virtual world – even though their body is bound to the physical world. Notably, this is not only true in highly mixed realities but also when during more trivial activities, such as reading books, watching television, chatting on social media, and listening to music (Coelho et al., 2006).

In this article, we argue that social media can also be classified as mixed reality, because it allows to mix objects from both physical and virtual worlds. For example, many social media platforms, including Instagram and Snapchat, allow consumers to use AR filters that augment their appearance or surroundings (Skarbez et al., 2021). Furthermore, we suggest that like music, books, and movies, social media strives to evoke feelings of immersion and presence, or even relations with individuals and brands (Hudson et al., 2019). In turn, when browsing social media, consumers are prone to adjust expectations and perceptions of reality in relation to virtuality (Jauréguiberry, 2000), which can make it challenging to distinguish which elements of communications are a part of physical or virtual words (Quéau, 1996). For example, virtual and physical elements of realities are being mixed when virtual influencers
post content on social media featuring them being present in a famous restaurant in New York, at a red-carpet event in Cannes, or even appearing in images with celebrities as a part of a brand commercial. As a result, consumers can get confused about what is a true reflection of the physical world (Van Esch et al., 2019; Mustak et al., 2022).

While recognizing the criticism of the definition of mixed reality for being overly broad, we argue for the applicability of the reality-virtuality continuum approach in the conceptualization of virtual influencers. Virtual influencers can appear to be a part of different realities, meaning that to understand the landscape of virtual influencer marketing communications, we need to acknowledge that the appearance and narrative of virtual influencers alter in their mix of virtual and physical environments.

**Proposed taxonomy of virtual influencers**

Based on the literature review, we propose that virtual influencers can be grouped into a 2×2 taxonomy according to their level of anthropomorphism and placements on the reality-virtuality continuum (see Figure 1). This taxonomy allows us to develop an understanding of how brands leverage virtual influencers in their communications to achieve various marketing goals. Specifically, we define four distinct categories of virtual influencers: hyper-realistic non-humans, hyper-realistic humans, unrealistic non-humans, and unrealistic humans. These categories are based on the extant literature that addresses the dimensions of anthropomorphism (e.g., Miao et al., 2022) and reality-virtuality (e.g., Skarbez et al., 2021). For an overview of the virtual influencer research pertinent to the development of the
Figure 1. A Taxonomy of Virtual Influencers

Hyper-realistic non-human virtual influencers can take different forms of animals and creatures that may or may not exist in the physical world. These virtual influencers tend to have lower levels of anthropomorphism, meaning that they do not resemble humans closely, although some of them often have form attributes of humans. For example, these influencers can wear human clothes and have human bodies attached to less-human heads. Hyper-realistic non-human influencers are created with the help of CGI technologies, making them take a 3D form that creates an illusion that they can be a part of the physical world. Hyper-realistic non-human influencers share different content that often features the physical world. The content that these influencers share and the behaviours they exhibit typically reflect the way these influencers look like. For example, the Bee Influencer, who looks like a real-life bee, shares content exhibiting behaviours that can be attributed to a bee. The content shared by hyper-realistic non-human influencers may include real-life influencers and other humans, who are portrayed to be a part of their lives. Therefore, hyper-realistic non-human virtual influencers can blur the boundaries between reality and virtuality for consumers.
Next, *hyper-realistic human* virtual influencers, like hyper-realistic non-human virtual influencers, are created using the same CGI technologies, which make them appear to exist in the physical world. However, these influencers resemble humans to a large extent, making them seem so human that it might be difficult for consumers to distinguish this category of virtual influencers from real-life influencers. Like real-life influencers, hyper-realistic human virtual influencers share content about their personal and social lives. Notably, the content shared by these digital characters often features them in the physical world performing human tasks, including attending events and meeting with friends. For example, virtual influencer Imma frequently appears to attend fashion shows and participate in commercial photoshoots.

Finally, just like hyper-realistic non-human influencers, hyper-realistic human influencers are often featured in content that includes real-life influencers, who seem to be their friends and colleagues. Accordingly, social media accounts of hyper-realistic virtual influencers make the boundaries between the real and virtual world extremely blurred, or even unrecognizable.

Moving forward, *unrealistic non-human* virtual influencers have a very low resemblance to humans, and they can take a variety of forms, including animals (e.g., a pet), unrealistic creatures (e.g., a unicorn), and humanized objects (e.g., a cupcake). These influencers are unlikely to be mistaken for being a part of a physical world because they typically look like 3D and 2D cartoon drawings. Unrealistic non-human influencers tend to exist in their own virtual world, although they occasionally share content featuring them as a part of a physical world. Accordingly, communications of unrealistic non-human influencers assume clear boundaries between physical and virtual worlds. In their virtual world, however, unrealistic non-human influencers often have look-alike (i.e., unrealistic non-human) friends. The content shared by this category of virtual influencers does not typically promote a particular lifestyle but instead focuses on certain topics or themes. For example, a virtual influencer called Good Advice Cupcake shares entertaining stories about life situations and offers advice to consumers on any life issues they may have.

Finally, *unrealistic human* virtual influencers have very high human resembles. At the same time, these influencers look like 3D and 2D cartoon characters, just like unrealistic non-human virtual influencers. Although unrealistic human virtual influencers typically exist in their own virtual worlds, they occasionally appear in the physical world as, for example, guests of real-life events. Still, because they look more like cartoon drawings, these virtual influencers create clear boundaries between the virtual and physical worlds, even if their level of anthropomorphism is relatively high. Unrealistic human virtual influencers create different
types of content, often demonstrating skills and knowledge in a particular area. For example, virtual influencer Kizuna AI is known for creating music videos and engaging with consumers in discussions about music and art.

To summarize, the landscape of virtual influencers is diverse, with influencers taking a variety of forms and appearing to exist in both virtual and physical worlds. While some of these influencers look like real-life influencers that appear to exist in the physical world, others do not resemble humans and are based in a virtual world. Still, consumers can engage and form relationships with all virtual influencers, meaning that they all can be used by brands to reach out to and connect with consumers.

Insights and Propositions for Virtual Influencer Marketing

Based on the proposed taxonomy of virtual influencers, we next discuss how brands can leverage virtual influencers in their social media marketing communication. In doing so, we do not only underline the advantages, but also attend to possible negative implications that brands need to consider. The propositions are based on the unique characteristics of virtual influencers and their placement in the proposed taxonomy.

Insights and Propositions from Academic Research

To advance the understanding of the effectiveness and downsides associated with virtual influencer marketing, we suggest an interplay between anthropomorphism and reality-virtuality. When browsing social media, consumers can immerse themselves in the digital environment with visual and textual stimuli (Witmer and Singer, 1998). The more real the environment appears to be, the more consumers perceive it as a true representation of the physical world (Mustak et al., 2022; Van Esch et al., 2019). Similarly, the more digital characters physically resemble humans, the more likely consumers are to treat them as humans in interactions as well as in forming associated opinions and evaluations (Chae, 2017; Corcoran et al., 2011). Accordingly, we argue that the higher the level of anthropomorphism ascribed to virtual influencers and the less these influencers appear to belong in a virtual environment, the more likely it is that consumers perceive and treat them as real-life influencers. Furthermore, we suggest that when interacting with virtual influencers that have higher anthropomorphism and appear to belong to the physical rather than the virtual world, consumers are more likely to compare themselves to these virtual influencers.
**Proposition 1:** The higher the virtual influencers’ perceived anthropomorphism and belongingness to pure mixed reality, the more likely consumers are to treat them as real-life influencers.

**Proposition 2:** The higher the virtual influencers’ perceived anthropomorphism and belongingness to pure mixed reality, the more likely consumers are to engage in social comparison with them.

Consumers commonly respond to digital characters by applying the same social rules and norms as they do to humans, especially when these digital characters are assumed to be socially intelligent (Festinger, 1954; Miao et al., 2021). We argue that all virtual influencers possess high levels of behavioural realism, as they all mimic the behaviours of real-life influencers by sharing narrative content on social media. According to the social response theory (Festinger, 1954), when consumers come across virtual influencers on social media, they engage with them in a similar fashion as they do with real-life influencers. In particular, consumers interact with virtual influencers by applying the same social rules and norms as they would in interactions with real-life influencers, even if they know that virtual influencers are not humans (e.g., Reeves and Nass, 1996; Moon, 2003). As virtual influencers, like real-life influencers, share narrative content about events in their lives, consumers are likely to treat these messages as though virtual influencers have real feelings and experiences. For example, consumers might leave empathic and comforting comments under a post about a virtual influencer's break-up, as consumers recognize breaking up as an emotional experience for humans. Hence, we propose that as long as virtual influencers exhibit human-like behaviours, consumers will respond to them as they do to real-life influencers.

**Proposition 3:** Consumers tend to apply the same social rules and norms when interacting with virtual influencers, as they do with real-life influencers.

As mixing realities is increasingly common due to continuous technological advances (Guthrie, 2020), consumers get to explore the boundaries of what is real and what is not (Flavian, 2019). However, these advances can be confusing or even harmful to consumers, who cannot always separate reality from virtuality (Quéau, 1996). As hyper-realistic virtual humans are designed to have human-like features and behaviours and appear in the physical world, at, for example, real-life restaurants and events, these influencers might be particularly difficult for consumers to distinguish from real-life influencers (Franke et al., 2023; Mustak et al.,...
Featuring hyper-realistic virtual humans in real-life settings might be especially confusing or harmful to vulnerable consumer groups like children and adolescents. These groups might not have the ability to identify or critically evaluate real-life influencer marketing nor master to distinguish reality from virtuality (De Veirman et al., 2019). Accordingly, we propose that when virtual influencers exist in an environment close to the pure mixed reality on the reality-virtuality continuum, it can become confusing or difficult for consumers to distinguish between real-life and virtual influencers. In doing so, we point to the particular relevance of this proposition in regard to vulnerable consumer groups.

**Proposition 4:** The more virtual influencers appear to exist in a physical world, the more difficult it is for consumers to distinguish them from real-life influencers.

As virtual influencers exist in an environment, where physical and virtual elements are being mixed, they can provide unique access into an imaginative world on social media. When consumers are able to immerse themselves into, for example, social media, it might suspend consumer’s abilities to identify and critically evaluate persuasive marketing tactics (e.g., product placements; Grigorovici and Constantin, 2004). This essentially means that consumers have their guards down and become easier to persuade (Green et al., 2004; Escalas, 2007). For example, if the bee influencer (see Figure 1), which looks like a real-life bee, creates content in which he shows the consequences global warming has on the world of bees, consumers are likely more receptive to this message. As consumers are able to immerse themselves in the world, thoughts and struggles of bees, which they would otherwise not be able to, they are also more likely to be receptive to the message that environmental problems are a threat to biodiversity. Hence, we propose that virtual influencers, especially those focusing on creating immersive narratives, are likely to be persuasive mediums for marketing communications, as immersion can lower consumers’ guards regarding persuasive marketing tactics.

**Proposition 5:** The higher the virtual influencers’ perceived realism (appearance and belongingness to the physical world), the more persuasive their communications are.

When interacting with real-life influencers on social media, consumers pay attention not only to the content that influencers share but also to who influencers are as individuals (Hugh et al., 2022; Penttinen et al., 2022). Real-life influencers can exhibit interest in different topics, such as fashion, and travel, or take stands on societal issues, such as politics and veganism. In turn, the interests of virtual influencers strongly affect the development of relationships with
consumers. For example, research shows that consumers are more likely to rely on recommendations from individuals that have views and beliefs similar to their own (Leung et al., 2022a; Schouten et al., 2020). Although virtual influencers cannot form opinions and beliefs, they can be designed to exhibit certain behaviours (Sands et al., 2022b; Thomas and Fowler, 2021). Hence, we argue that regardless of their visual appearance and the reality in which virtual influencers appear to exist, their beliefs and stands play a central role in fostering relationships with consumers.

**Proposition 6:** Assigned beliefs and stands of virtual influencers play a central role in driving success of virtual influencer marketing.

Virtual influencers are created to share social media content and interact with consumers (Appel et al., 2020; Guthrie, 2020). Communications of virtual influencers are commonly managed by teams of professionals and AI-powered technologies (Sands et al., 2022a). In turn, virtual influencers can communicate with consumers at any time of the day, also in real-time (Conti et al., 2022; Davenport et al., 2020). As a result, virtual influencers can engage with large numbers of consumers through personalized messages more efficiently than real-life influencers (Stein et al., 2022). Being aware of virtual influencers’ digital nature, consumers are likely to consider them autonomous. Hence, they can expect these digital characters to be able to engage in quick and personalized interactions, similar to other digital characters, such as different types of avatars (Crolic et al., 2022; Miao et al., 2022). This argumentation is also in line with previous research, which suggests that virtual influencers generate more engagement in comparison to real-life influencers (Arsenyan and Mirowska, 2021). Accordingly, consumer expectations regarding interactions involving virtual influencers are likely to differ from those involving real-life influencers.

**Proposition 7:** Consumers expect virtual influencers to engage in more personalized and responsive communications compared to real-life influencers.

The use of virtual influencers has become an increasingly popular among brands seeking to connect with consumers in unique and innovative ways (Conti et al., 2022; Lou et al., 2023). While virtual influencers can help brands achieve diverse marketing goals, the effectiveness of virtual influencer marketing can be affected by the characteristics and features of the digital platforms on which they are used (Beckers et al., 2018; Devereux et al., 2019). For example, virtual influencers may have different opportunities to engage with consumers on typical social
media platforms, such as Twitter and Instagram, compared to more immersive virtual platforms, such as the metaverse (Dwivedi et al., 2023; Sands et al., 2022b). More specifically, on social media platforms, virtual influencers may interact with their followers through direct messages, comments, and likes, whereas on more immersive virtual platforms, they may be able to engage with consumers through virtual events and experiences. Hence, the effectiveness of virtual influencers in achieving specific marketing goals (e.g., creating awareness, strengthening relationships, etc.) is likely to vary across platforms. In practice, brands could measure this through engagement metrics, such as likes, comments, and direct interactions on these platforms, and by examining the impacts on consumer responses, such as purchase behaviours and brand attitudes.

**Proposition 8:** The effectiveness of virtual influencers in promoting brands and influencing consumer behaviour varies across digital platforms.

**Practical Implications**

When using virtual influencers in social media marketing communications, brands need to take care of many decisions that can have strong impacts on the effectiveness of individual marketing campaigns or even affect consumer attitudes and behaviours toward brands on a more general level. Below, we outline the key issues that brands should consider in relation to virtual influencer marketing. In doing so, we attend to both creator-owned virtual influencers that can collaborate with several brands, as well as brand-owned virtual influencers that only advocate for specific brands.

**Selecting and designing virtual influencers**

When selecting creator-owned influencers for promotional campaigns, brands can undertake similar approaches to working with real-life influencers. Most importantly, brands need to pay attention to the influencer-brand fit (Hugh et al., 2022; Leung et al., 2022b), that is, the degree to which influencers’ appearance (e.g., see Figure 1), stands, beliefs, and communication style are aligned with those of the brand (Ozdemir et al., 2023). Influencer-brand fit plays an important role in guiding consumer expectations regarding the promoted products and services as well as in shaping the desired brand image and attitude. As an illustrative example, Noonoouri, a virtual influencer who shares social media content about fashion, has a strong fit with the fashion magazine Vogue, which is known for its forward-looking approach to fashion and lifestyle trends. Similarly, when designing their own influencers, brands need to carefully
select every aspect of their digital characters, including appearance, background story, and behaviours, in a way, that aligns with the brand and is appropriate for the target audience. For example, for a new fragrance campaign targeted at young women, the fashion brand Prada created a virtual influencer Candy, a young girl dressed in clothing that resembled the product packaging.

Allocating tasks to virtual influencers

There are also several decisions for brands to make regarding managing communications involving virtual influencers. When collaborating with creator-owned virtual influencers, brands can agree on the campaign details in the same way as they do with real-life influencers. These details include, for example, the content of the promotional message and the way the influencer responds to consumer inquiries. To illustrate, in collaboration between electronics brand Samsung and virtual influencer Lil Miquela, the digital character shared several posts featuring Samsung’s smartphone and encouraged her followers to share content related to the promoted products in line with the campaign “Do What You Can’t”. However, when designing their own virtual influencers, brands need to make more comprehensive decisions about what kind of content they share and what tasks they perform, such as answering consumer inquiries, interacting with consumers in the comments section, or even engaging in communications with other influencers. For example, virtual influencer Dong Dong, owned by the e-commerce company Alibaba, was designed to promote competition-themed merchandise during the 2022 Beijing Winter Olympics and to engage in communications with consumers by answering their inquiries live.

Leveraging virtual influencers across different digital platforms and beyond

Virtual influencers can be leveraged by brands on different social media channels and other digital platforms, including brands’ websites and the metaverse (Conti et al., 2022; Sands et al., 2022b). Brands can also include virtual influencers in communications shared through more traditional channels, such as television advertisements and printed media. Besides, brands that own virtual influencers do not need to create separate social media profiles for them. Instead, these digital characters can appear in content, that brands share on their original social media pages. For example, the fashion brand Balmain does not only collaborate with creator-owned influencers but also has its own virtual influencers that are featured in communications on the brand's social media pages as well as in shopping mall posters and outdoor billboards. The digital nature of virtual influencers allows them to simultaneously exist on different channels,
making it possible for consumers to interact with familiar characters seamlessly, strengthening relationships with brands they represent. Therefore, we encourage brands to take advantage of the flexibility associated with virtual influencers to interact and develop relationships with consumers across those different media platforms, which can create effective promotions for brands.

*Fostering consumer engagement and understanding*

Behind communications of virtual influencers are typically humans or AI technologies managing their social media accounts. Because of this, virtual influencers can be highly efficient in responding to consumer inquiries and reacting to consumer engagements. For example, virtual influencer Imma frequently replies to consumer comments and motivates them to ask her questions. This responsiveness increases the perceived interactivity of communications involving digital characters and encourages consumers to engage with the virtual influencer even more in the future (Penttinen et al., 2022). As a result, consumers are more likely to create strong bonds with virtual influencers, and, therefore, become more inclined to follow their recommendations. The improved consumer engagement also allows brands to collect more data about consumer behaviours. With the help of analytical tools and AI-powered technologies, brands can then use the data to derive insights about consumer preferences and attitudes and use them in future marketing decisions. Notably, although the use of AI technologies in virtual influencer marketing remains limited, we argue that it will become more prominent in the field (see also Appel et al., 2020; Arsenyan and Mirowska, 2021), opening new opportunities for brands in consumer engagement and understanding.

*Promoting responsible behaviours*

In this article, we also underline that brands should adopt responsible behaviours when using virtual influencers in communications targeted to consumers. Currently, there is no legislation providing guidance on what brands should do to avoid misleading consumers. Based on the literature review and evaluation of the current business practices, we suggest that brands need to be transparent about using digital characters in their communications through disclaimers and pages that provide additional information about who virtual influencers are. In addition, brands should make sure that consumers are aware about how their data is being collected and used, when they engage with virtual influencers. Finally, we advise that when opting to cooperate with creator-owned virtual influencers, brands should also make sure individuals and
firms that own digital characters are transparent in their communications and do not engage in any unethical behaviours that can hurt brands and their consumers in any way.

**Future Research Directions for Virtual Influencer Marketing**

Our analyses of academic research and business practices further generate future research directions for virtual influencer marketing. We outline these directions based on the defined unique characteristics attributed to virtual influencers, the proposed virtual influencers taxonomy, as well as relevant ethical considerations. We group our suggestions for future research directions into four key managerially relevant areas that correspond the characteristics of virtual influencers: (1) customization, (2) flexibility, (3) ownership, (4) automation (see Table 1). Finally, we make references to our eight propositions to highlight the alignment between the propositions and future research agenda.

**Table 1. Future Research Directions for Virtual Influencer Marketing**

<table>
<thead>
<tr>
<th>Key Issues</th>
<th>Implications</th>
<th>Future Research Questions</th>
</tr>
</thead>
</table>
| **Customization** | • The appearance of virtual influencers can be temporary or permanently altered.  
• Like real-life influencers, virtual influencers often have stands regarding political and societal issues.  
• There are different categories of virtual influencers that consumers can follow and interact with on social media.  
• The appearance and lifestyle of real-life influencers can have an impact on how consumers evaluate themselves.  
• Hyper-realistic human virtual influencers (e.g., Bermuda and Rozy Oh) can be indistinguishable from real-life influencers.  
• Virtual influencers’ anthropomorphic and realistic appearance can increase a sense of social presence, but it can also make consumers feel uneasy.  
• Consumers are prone to compare themselves to influencers that they follow and engage with.  
• Interactions with virtual influencers can lead to the uncanny valley effect due to their high resemblance with humans. | • How do consumers respond to changes/variations in the physical appearance of virtual influencers?  
• How do consumers respond to stands of real-life vs. virtual influencers?  
• How do consumers form relationships with real-life vs. virtual influencers?  
• How do consumers form relationships with different categories of virtual influencers?  
• How do different categories of virtual influencers affect the self-perceptions of consumers vs. real-life influencers?  
• How does anthropomorphism and reality-virtuality assigned to virtual influencers affect their persuasiveness?  
• What kind of consumers are more likely to engage with hyper-realistic virtual influencers?  
• How do anthropomorphism and realism of virtual influencers affect their power to affect consumer self-image?  
• Does the environment in which virtual influencers appear (mixed vs. virtual) affect the uncanny valley effect? |
| **Flexibility** | • Virtual influencers can perform any task as a part of promotional campaigns, even if those tasks cannot be physically performed by humans. | • Which categories of virtual influencers are most suited for performing tasks that real-life influencers cannot perform as a part of a marketing campaign? |
• Virtual influencers can seamlessly transfer from social media to other digital environments (e.g., metaverse).

• Working with virtual influencers is associated with lower costs (e.g., related to makeup, travel, etc.).

• Virtual influencers can have their social media accounts across different platforms.

• Social media can be understood as mixed reality in which reality has been altered by AR technology, such as face filters and virtual backgrounds.

• Virtual influencers can be featured in the physical world together with real-life influencers and celebrities.

Table 1. Future Research Directions for Virtual Influencer Marketing (Continued)

<table>
<thead>
<tr>
<th>Key Issues</th>
<th>Implications</th>
<th>Future Research Questions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ownership</td>
<td>• Virtual influencers can be owned by their creators or brands.</td>
<td>• Does influencer effectiveness depend on the virtual influencer ownership type (brand- vs. creator-owned)?</td>
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<td></td>
<td>• The owners of virtual influencers may be known or remain anonymous.</td>
<td>• Do consumers pay attention to the ownership of virtual influencers?</td>
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<td></td>
<td>• Anyone can own a virtual influencer. For example, a white man owns Shudu, a black female virtual influencer.</td>
<td>• Does it make a difference in consumer perception of the virtual influencer, whether the owners are known or anonymous?</td>
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<td></td>
<td>• Brands like Prada and GEICO have their own virtual influencers, which advocate for them on social media and other promotional channels (e.g., magazines).</td>
<td>• How are consumer perceptions of a virtual influencer affected by the (dis)similarities between the owner of the virtual influencer and the design of the influencer?</td>
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<td></td>
<td>• Virtual influencers owners can decide on all aspects of influencer appearance, behaviours, and other representations.</td>
<td>• What types of brands are most likely to benefit from developing their own virtual influencers?</td>
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<td></td>
<td>• Influencers that are owned by their creators (e.g., Imma and Lil Miquela) tend to collaborate with several brands.</td>
<td>• When should brands create separate social media profiles for their virtual influencers?</td>
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<td></td>
<td>• Consumers generally perceive sponsored content as being less authentic and trustworthy than other communications of influencers.</td>
<td>• What do brands need to consider when designing their own virtual influencers (e.g., choosing a virtual influencer category)?</td>
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<td></td>
<td>• Virtual influencers can be owned by their creators or brands.</td>
<td>• Do consumers respond differently to virtual influencers who advocate for several brands vs. one brand?</td>
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<tr>
<td></td>
<td>• The owners of virtual influencers may be known or remain anonymous.</td>
<td>• How do consumers respond to communications featuring products and services depending on whether they are shared by real-life or virtual influencers (owned by creators or brands) and appear as sponsored or non-sponsored content?</td>
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<td>Automation</td>
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<tr>
<td>• AI technologies can be used to analyse data about consumer engagement</td>
<td>• Based on what criteria can AI-driven virtual influencers</td>
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<td>with social media content (e.g., likes,</td>
<td>identify the most prominent partnerships with brands?</td>
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<tr>
<td>comments, shares, and personal messages) and connect that data with</td>
<td>• Based on what criteria can AI-driven virtual influencers</td>
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<tr>
<td>other sources (e.g., brands’ websites).</td>
<td>identify the most prominent types of promotional messages?</td>
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<tr>
<td>• Communications of virtual influencers can be managed by humans or AI</td>
<td>• When and how should consumers be made aware that they are</td>
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<tr>
<td>technologies. However, not all consumers feel comfortable engaging</td>
<td>engaging with AI technology?</td>
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<td>with AI technologies.</td>
<td>• What is the best way to disclose communications managed by AI</td>
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<td>• Brand-owned virtual influencers can fully represent brands.</td>
<td>technologies?</td>
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<tr>
<td>• Consumers can follow and engage with virtual influencers, just like</td>
<td>• What kind of tasks should brand-owned virtual influencers</td>
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<td>they do with real-life influencers.</td>
<td>perform as brand representatives on social media?</td>
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<tr>
<td>• Virtual influencers can engage in different forms of communication,</td>
<td>• What are the differences in consumer expectations regarding</td>
<td></td>
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<td>including textual, audio, and video.</td>
<td>the responsiveness of virtual vs. real-life influencers?</td>
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<tr>
<td>• Based on what criteria can AI-driven virtual influencers identify the</td>
<td>• How do consumers respond to different forms of communication</td>
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<td>most prominent partnerships with brands?</td>
<td>that virtual influencers perform?</td>
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<tr>
<td>• Based on what criteria can AI-driven virtual influencers identify the</td>
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<td>most prominent types of promotional messages?</td>
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<td>• When and how should consumers be made aware that they are engaging with</td>
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<td>AI technology?</td>
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<td>• What is the best way to disclose communications managed by AI</td>
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<td>technologies?</td>
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<td>• What kind of tasks should brand-owned virtual influencers perform as</td>
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<td>brand representatives on social media?</td>
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<td>• What are the differences in consumer expectations regarding the</td>
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<tr>
<td>responsiveness of virtual vs. real-life influencers?</td>
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<tr>
<td>• How do consumers respond to different forms of communication that</td>
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<td></td>
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<tr>
<td>virtual influencers perform?</td>
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</table>

As owners of virtual influencers can customize both the narrative and form of the influencer, we suggest future research to explore how their persuasiveness affects consumer behaviours in positive and negative ways. Specifically, future research should shed light on how the customization of virtual influencers affects consumer responses and self-evaluations, and how these vary for different virtual influencers (Proposition 2 and 3). Furthermore, we suggest researchers should investigate how consumers develop relationships with virtual influencers representing different categories (Proposition 1 and 5). We also point to the need for research evaluating which consumers are most likely to engage with virtual influencers (Mirowska and Arsenyan, 2023). Specifically, we suggest shedding light on whether consumers with certain characteristics (e.g., need for uniqueness, interest in AI, etc.) are likely to be more receptive and less sceptical towards virtual influencers than other consumers (Proposition 6). Finally, we advise future research to explore factors that mitigate the negative feelings, such as scepticism, that consumers may experience when engaging with virtual influencers, such as those related to their appearance and belongingness to a certain reality (Proposition 4 and 7).

Virtual influencers can defy the boundaries of reality, which allows brands to utilize them in ways that are impossible for real-life influencers. Therefore, we suggest that future research should further investigate the potential of creating consistent and always-on presences for virtual influencers across social media platforms (Proposition 7 and 8). Also, as proposed in this article, social media can be understood as a mixed reality due to the augmentation of reality...
through, for example, face-augmenting filters. However, research exploring immersion in social media is scant, meaning that there is a need for developing a better philosophical and phenomenological understanding of social media as a mixed reality, also beyond the virtual influencer marketing context. To continue, future research should look into how consumers transfer relationships developed with virtual influencers across social media platforms and other digital platforms, such as the metaverse, which appears to be the next prominent platform for using virtual influencers (Proposition 8). Finally, we advise scholars to explore which practices related to working with virtual influencers can be effectively used to work with real-life influencers and vice versa. For example, the advantages of having exclusive collaborations with real-life influencers and creating brand-owned virtual influencers might be similar in some respects.

Next, we advise future research to investigate the consequences of leveraging influencers owned by creators and brands. This research should look into the implications of the ownership type on, for example, consumer brand attitudes, sales, perceived communication persuasiveness, and strength of relationships between consumers, brands, and influencers. Besides, there is a need to explore the importance of a physical and narrative alignment between the owner and the virtual influencer (Breves et al., 2020). In extension to this, transparency regarding the ownership of virtual influencers might prove to affect consumer attitudes towards the influencer as well as their owners and the associated brands. Hence, we suggest that future research investigates how transparency affects scepticism towards virtual influencers, and how, in turn, this affects consumers’ attitudes related to owners of these influencers (Proposition 6). Concerning ownership, we also advise researchers to look into what brands need to consider when developing their own influencers, and which social media platforms to use, to ensure that they are effective in the marketing communications targeted to consumers (Proposition 8).

Lastly, as we predict that the use of AI-based influencers will continue to increase, we advise future research to explore how brands can leverage AI technologies in collecting data, designing communications, and even selecting appropriate partnerships. Furthermore, we suggest investigating how consumer responses to marketing communications are affected when consumers are aware that communications are managed by human versus AI-driven communications (Proposition 1 and 3). We also urge researchers to look into how vulnerable consumer groups (e.g., children) respond to virtual influencers. Specifically, future research should investigate whether vulnerable consumer groups can identify and critically evaluate virtual influencers (Proposition 4 and 5). For example, we question whether vulnerable
consumer groups understand that virtual influencers can pose as unrealistic role models (Proposition 2). Finally, we advise shedding light on the different tasks virtual influencers should perform across different digital platforms (Proposition 8). Here, future research could also explore when it is most effective to use virtual influencers rather than real-life influencers in communications with consumers. For example, virtual influencers might be able to handle simple inquiries efficiently, whereas real-life influencers might be more successful at selling products in live streams (Proposition 7).

Conclusion

Virtual influencer marketing is a recent and popular development in social media marketing communications, which involves brand collaborations with non-human digitally created characters that obtain influential status among large numbers of consumers. The academic literature on virtual influencers is scarce and often uses a very mixed vocabulary to explain virtual influencer marketing. Hence, the purpose of the article was to conceptualize virtual influencer marketing, and – in response to the special issue call – outline the opportunities and dangers associated with using virtual influencers in social media marketing communications. With this article, we establish definitional and conceptual clarity of virtual influencers by characterizing them using four unique attributes: customization, flexibility, ownership, and automation. In doing so, we highlight both the negative outcomes associated with communications involving virtual influencers and the opportunities that virtual influencer marketing offers. We also propose a 2×2 taxonomy of virtual influencers based on the virtual influencers’ perceived level of anthropomorphism and placement on the reality-virtuality continuum. Finally, we synthesize academic research and business practices to offer insights and propositions that provide managerial implications and an agenda for future research regarding the ethical use of virtual influencers.
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Conti, M., Gathani, J., & Tricomi, P. P. (2022). Virtual Influencers in Online Social Media. *IEEE Communications Magazine*, 60(8), 86-91. [https://doi.org/10.1109/MCOM.001.2100786](https://doi.org/10.1109/MCOM.001.2100786)


## Appendix. Literature overview as foundation for taxonomy

<table>
<thead>
<tr>
<th>Article</th>
<th>Method</th>
<th>Reality-Virtuality</th>
<th>Anthropomorphism</th>
<th>Key Findings</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ahn, Cho, and Tsai (2022)</td>
<td>Survey</td>
<td>X</td>
<td>X</td>
<td>There is a positive relationship between virtual influencers’ level of anthropomorphism and consumers’ perceived social presence. Virtual influencers’ high levels of anthropomorphism and social presence result in improved perceived social and physical attractiveness.</td>
</tr>
<tr>
<td>Arsenyan and Mirowska (2021)</td>
<td>Data scraping</td>
<td></td>
<td>X</td>
<td>Virtual influencers with a high level of anthropomorphism receive significantly lower positive reactions than human influencers and virtual influencers with moderate levels of anthropomorphism. The uncanny valley effect contributes to the negative reactions.</td>
</tr>
<tr>
<td>Chiu and Ho (2023)</td>
<td>Survey</td>
<td></td>
<td>X</td>
<td>Physical attractiveness is equally relevant for virtual influencers as for human endorsers and micro-celebrities when endorsing beauty products. However, the expertise and trustworthiness of virtual influencers (cf. human endorsers and micro-celebrities) do not significantly affect consumers’ purchase intention.</td>
</tr>
<tr>
<td>Conti, Gathani, and Tricomi (2022)</td>
<td>Data scraping, Interviews, Survey</td>
<td></td>
<td>X</td>
<td>Virtual influencers offer brands more flexibility, greater exclusivity, and lower risks compared to human influencers, making them appear innovative. However, virtual influencers may create unrealistic expectations for consumers, seem less relatable and authentic, and result in higher expenses for brands.</td>
</tr>
<tr>
<td>de Brito Silva et al. (2022)</td>
<td>Data scraping</td>
<td></td>
<td>X</td>
<td>This article defines two types of virtual influencers: incarnate avatars (embodiments of brands) and innate influential avatars (not tied to a particular brand).</td>
</tr>
<tr>
<td>de Silva Oliveria and Chimenti (2021)</td>
<td>Systematic literature review, Ethnography, Interviews</td>
<td>X</td>
<td>X</td>
<td>The article identifies five key categories that characterize virtual influencers and can serve as a guide for brands interested in utilizing them: anthropomorphisms/ humanization, attractiveness, authenticity, scalability, and controllability.</td>
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<tr>
<td>Deng and Jiang (2023)</td>
<td>Experiments</td>
<td></td>
<td>X</td>
<td>Consumers exposed to virtual influencers (cf. human influencers) experience significantly lower appearance anxiety. These consumers are also less likely to engage in social comparison.</td>
</tr>
<tr>
<td>Article</td>
<td>Method</td>
<td>Reality-Virtuality</td>
<td>Anthropomorphism</td>
<td>Key Findings</td>
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<td>Jeongmin et al. (2023)</td>
<td>Experiments</td>
<td>X</td>
<td>X</td>
<td>When virtual influencers become too human-like, it can reduce the effectiveness of advertising because of evoked cognitive dissonance experienced by consumers. This discomfort typically arises when digitally created influencers are featured alongside real products and humans in reality.</td>
</tr>
<tr>
<td>Kim and Park (2023)</td>
<td>Survey</td>
<td></td>
<td>X</td>
<td>The attractiveness of virtual influencers is not associated with purchase intention. Mimetic desire and brand attachment mediate the relationship between virtual influencers’ attractiveness and purchase intention. The product-endorser fit with the brand moderates the mediation effect.</td>
</tr>
<tr>
<td>Kim et al. (2023)</td>
<td>Experiments</td>
<td>X</td>
<td>X</td>
<td>Human-like virtual influencers are more effective than anime-like virtual influencers in improving message credibility and attitudes when sponsorship is not disclosed. However, these effects disappear when sponsorship is disclosed.</td>
</tr>
<tr>
<td>Lou et al. (2023)</td>
<td>Interviews</td>
<td></td>
<td>X</td>
<td>Virtual influencers attract followers based on six main motivations: novelty, information, entertainment, surveillance, aesthetics, and social interaction. Virtual influencers are effective in building brand image and awareness, but they are less effective than human influencers in inciting purchase intention due to their lower levels of authenticity, similarity to consumers, and weaker parasocial relationships.</td>
</tr>
<tr>
<td>Franke, Groepel-Klein, and Müller (2022)</td>
<td>Experiments</td>
<td>X</td>
<td>X</td>
<td>Consumers can find it difficult to distinguish virtual influencers from human influencers. Virtual influencers can foster higher perceived ad novelty compared to human influencers. A good fit between the virtual influencer and the promoted product can lead to higher advertising effectiveness.</td>
</tr>
<tr>
<td>Mirowska and Arsenyan (2023)</td>
<td>Experiments</td>
<td>X</td>
<td>X</td>
<td>Highly empathetic consumers are more inclined to follow virtual influencers and perceive them as socially attractive compared to human influencers. This effect disappears when consumers are informed about the digital nature of virtual influencers.</td>
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<td>Mrad, Ramadan, and Nasr (2022)</td>
<td>Interviews</td>
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<td>X</td>
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<td>Ozdemir et al. (2023)</td>
<td>Experiments</td>
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<td>Sands et al. (2022a)</td>
<td>Experiments</td>
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<tr>
<td>Sands et al. (2022b)</td>
<td>Survey</td>
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<td>X</td>
<td>X</td>
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<tr>
<td>Stein et al. (2022)</td>
<td>Experiment</td>
<td></td>
<td>X</td>
<td>X</td>
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<tr>
<td>Thomas and Fowler (2021)</td>
<td>Experiments</td>
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</table>

Consumers who follow virtual influencers characterise them in four different ways: 1) as generated content, 2) a brand-owned character, 3) a human individual or 4) a virtual imagery. Furthermore, while virtual influencers who are not tied to a particular brand are often featured in a realistic environment, brand-owned virtual influencers are usually featured in futuristic settings.

Compared to human influencers, virtual influencers are perceived as less credible and shown to be less effective in yielding positive brand attitudes. However, virtual influencers are perceived as equally credible and effective endorsers as human influencers when they use rational (cf. emotional) endorsement language.

There is no difference in consumer’s intention to follow virtual influencers and human influencer. Virtual influencers are more likely to evoke word of mouth intentions and virtual influencers have a greater effect on consumers experiencing a higher need for uniqueness.

This article outlines the opportunities (e.g., creating brand ambassadors in the metaverse and improving customer service) and challenges (e.g., avoiding posing unrealistic beauty standards and advertising misleading or false claims) for brands using virtual influencers.

Consumers who were exposed to virtual influencers report stronger parasocial interactions than those who were exposed to human influencers. However, consumers also perceive virtual influencers as having lower levels of human-likeness and similarity to themselves.

The behaviours of virtual influencers have similar effects on the endorsed brands as the behaviours of human influencers. Virtual influencers are more likely to be perceived as similar and interchangeable compared to human influencers.
<table>
<thead>
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<tr>
<td>Yang et al.</td>
<td>Experiments</td>
<td>Virtuality: X</td>
<td>Low: X  High: X</td>
<td>Virtual influencers with high levels of anthropomorphism can serve as effective communicators about corporate social responsibility communications (CSR). Higher levels of anthropomorphism yield higher levels of trustworthiness and expertise resulting in higher intentions to engage in CSR. This article outlines four unique characteristics of virtual influencers: customization, flexibility, ownership, and automation. It provides a taxonomy of virtual influencers based on the dimensions of anthropomorphism and reality-virtuality. This article further reflects on the opportunities (e.g., high levels of control) and dangers (e.g., misleading representation) associated with virtual influencer marketing.</td>
</tr>
<tr>
<td><em>This article</em></td>
<td>Conceptual</td>
<td>Virtuality: X</td>
<td>High: X</td>
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</table>

Notes: X denotes presence