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**Sinergie SIMA**  
Management Conference



# **Rediscovering local roots and interactions in management**

*Conference Proceedings*

**Short papers**

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# **Rediscovering local roots and interactions in management**

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## ***Conference Proceedings***

### **Short Papers**

edited by

*Arabella Mocciaro Li Destri, Marta Ugolini,  
Angeloantonio Russo and Savino Santovito*

# The rise of Virtual Influencers: Bizarrely realistic or scarily uncanny?

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**Framing of the research.** *The emergence of Web 3.0 has triggered a paradigm transformation in endorser marketing. The convergence of social media and artificial intelligence (AI) technologies is reshaping the way brands and consumers engage with endorsers.*

*Traditionally, endorsement marketing is the practice of acquiring experts or individuals with a high reputation, namely “celebrities”, to promote brands’ products or services to others (Liu et al., 2020). Their effectiveness has consistently contributed to positive outcomes in terms of customer attitudes, intentions, and behaviour (Arora et al., 2021). However, the rise of social media represented the first disruptive shift in how marketers engage celebrities. In the last decade, a new phenomenon of so-known “influencers” has begun to outclass traditional celebrities and dominate branding and marketing communication (Feng et al., 2021). According to Ki and Kim (2019), an influencer is an independent, third-party endorser who built a vast social network by publicly expressing opinions. More specifically, an influencer is a specialist in using online presence to promote products or services to the audience, in exchange for compensation from brands or companies (Campbell et al., 2022).*

*Although traditional influencers are widely recognized, the newest wave in brand communication is to leverage “nonhuman alternatives to traditional celebrity endorsers” (Thomas and Fowler 2021: 11). Prada, Calvin Klein, and Hugo Boss are just some of the most fervent adopters of virtual influencers, who have successfully engaged social media to promote their products and brand reputation (Sands et al., 2022). According to Thomas and Fowler (2021), AI or digital influencers - well known as virtual influencer - are computer-created characters or personas with human features, traits, and personalities that are designed to look and behave like real-life human influencers for the sake of influence. While Arsenyan and Mirowska (2021: 2) refer to virtual influencers as “agents augmented with digital avatars, designed to look human”.*

*In this regard, Choudhry et al. (2020) acknowledge that virtual influencers are not just restricted to highly human-like representations, but they may differ depending on the extent to which they resemble humans. Therefore, Choudhry et al. (2020) have classified virtual influencers by encompassing those with both human and non-human appearances into these distinct categories: (i) Non-Human, designed without a human identity, instead frequently that of an animal; (ii) Animated Human, designed in the likeness of a human being but as an animated, anime, or cartoon character; (iii) Mimic-Real Human, visually indistinguishable from a human.*

*The purpose of virtual influencers is akin to traditional influencers, especially in terms of advantages, popularity, status, personality and interactions (Arsenyan and Mirowska, 2021). In this sense, influencers exert their influence via content they create for their followers, while acting as opinion leaders capable of shaping consumers’ decisions (Shan et al., 2019). They have typically a large audience (Taillon et al., 2020), are specialized in a particular niche or product category (Campbell et al., 2022), tie a trustworthy and two-way communication with followers (Boerman and Van Reijmersdal, 2020), and share self-generated content (Karagür et al., 2022). Thus, they balance their advertising content with realism and expression of ordinary routine to enthrall their followers by turning them into narrative advertising, sponsored entertainment and credible EWOM (Breves et al., 2019; Ye et al., 2021).*

*Although virtual influencers share the same attributes as traditional ones, they present a unique array of advantages.*

*When it comes to benefits, they provide a balance of flexibility, exclusivity, innovation, and safety, which traditional influencers may struggle to achieve due to the limitations of physical presence (Conti et al., 2022). In terms of flexibility, they are leveraged for promotional purposes in a wide range of settings and times. Due to their adaptability, virtual influencers are unconstrained and able to continue creating innovative content even during times of confinement, as is also demonstrated by the Covid-19 pandemic (Conti et al., 2022).*

*Furthermore, brands may create or commission virtual influencers to promote their products, which enhances the credibility and authority of their endorsement (Yan et al., 2022). In some cases, virtual influencers are tailored to mirror the brand’s image and values (Sands et al., 2022), serving as organizational stakeholders that perform specific*

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functions such as advertising campaigns and strategic communication. By collaborating with virtual influencers, companies avoid the unpredictability often associated with traditional influencers' behaviour (Conti et al., 2022). In addition, virtual influencers lend the company a greater brand reputation, as their implementation establishes the company as forward-thinking and technologically advanced in the eyes of users (Conti et al., 2022). Among other advantages, Thomas and Fowler (2021) highlighted that virtual influencers leverage artificial intelligence technology to maintain uninterrupted interaction with their audience (Thomas and Fowler, 2021).

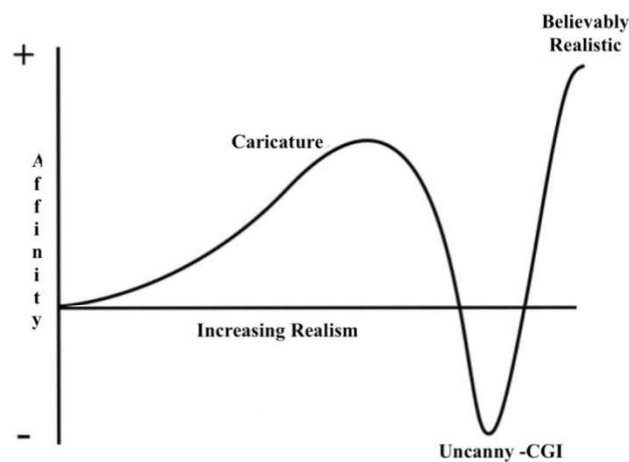
Despite virtual influencers offering an innovative approach to endorsement, they may still receive negative perceptions from certain segments of their audience (Arsenyan and Mirowska, 2021; Lou et al., 2022). This aspect was further highlighted in a recent study on virtual influencers, where a participant's comment "Bizarrely realistic. This online person looks so real... If you think about that... It's kind of scary" (Wortelboer, 2022: 28), supported the notion that the high degree of similarity to human evoke uncanniness.

While virtual influencers may strongly resemble human traits, they are not representative of any real-world human being (Moustakas et al., 2020), leading to confusion among users who may mistake them for traditional influencers (Franke et al., 2023). According to a recent report, 42% of Generation Z and Millennials follow an influencer without recognizing that the profile is virtual (Kim and Park, 2023; Chowdhary, 2019). This is likely due to the remarkably high level of humanization that virtual influencers exhibit, rendering them indistinguishable from human beings (Kim et al., 2023).

In this vein, anthropomorphism is the practice of imbuing non-human beings with human characteristics, desires, and ambitions in order to present them as more sentient (Zhu and Chang, 2020). In fact, this process exceeds merely adopting physical features, assigning human qualities such as consciousness, intentionality, cognitive processing, emotional experiences, and behavioral traits to nonhuman entities (Blut et al., 2021). However, the degree to which virtual influencers exhibit these human features may impact how they are perceived by audiences. Wiese and Weis (2020) suggested that Mimic-Real Humans, or High-humanized virtual influencers, are frequently perceived more negatively compared to Animated Humans, or Low-humanized virtual influencers, and Non-human or Non-humanized virtual influencers.

To well express this concept, we introduce the Uncanny Valley Theory which posits that individuals experience a negative emotional response when faced with an object or entity that resembles a human being (Mende et al., 2019; Mori, 1970). While entities and objects that bear a resemblance to humans can be tolerated up to a certain point, if the degree of similarity exceeds what is considered acceptable due to inconsistent realism or atypical features in the stimuli, they become "uncanny." This sense of uncanniness can unsettle observers and impact their sense of well-being (Lou et al., 2022; Mori, 1970) (Figure 1).

Fig. 1: Mori's graph of the Uncanny Valley Theory (Seymour et al., 2017). The graph shows the Uncanny Valley and the non-linear relationship between increasing realism and the affinity to an entity.



Recent studies have investigated followers' relation to virtual influencers relying on the Uncanny Valley Theory as a framework (Arsenyan and Mirowska, 2021; Block and Lovegrove, 2021; Lou et al., 2022; Yang et al., 2022). According to Arsenyan and Mirowska's study (2021), which examined user comments and reactions to virtual influencer posting, followers had more negative reactions to virtual influencers that appeared too human-like, as opposed to those that resembled more like anime characters or human influencers. Instead, Lou et al.'s (2022) study occupies a middle ground between providing evidence for the Uncanny Valley Theory and challenging its validity. In fact, the study reported that the majority of respondents described virtual influencers as "authentically fake" and perceived them as uncanny when they simultaneously appeared human-like and artificial. However, some respondents were conscious that human-like virtual influencers are artificially created, and consequently continued to engage with their content.

Although scholars have confirmed the virtual influencers' uncanniness, a few studies have suggested that the level of uncanniness exhibited by virtual influencers contributes to their appeal, rather than creepiness (Block and

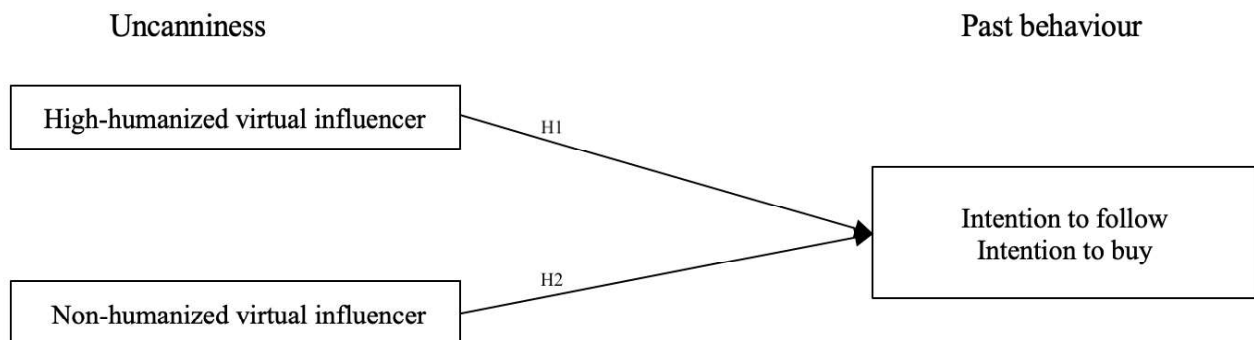
Lovegrove, 2021; Yang et al. 2022). In light of this, Block and Lovegrove (2021) state that virtual influencers' transparent characteristics and ability to display human-like traits ultimately increased their marketing effectiveness in persuading followers. Furthermore, Yang et al. (2022), comparing two types of virtual influencers, one humanlike and one cartoonlike, even further disproved Mori's theory. The authors refuted their hypothesis by acknowledging that virtual influencers with high humanness elicited higher attractiveness, reliability, and expertise to followers.

Drawing on this reasoning, the following hypotheses are proposed:

**H1:** A High-humanized virtual influencer generates a greater uncanniness that negatively impacts past behaviour

**H2:** A Non-humanized virtual influencer generates a lesser uncanniness that positively impacts past behaviour

Fig. 2: Conceptual framework



**Purpose of the paper.** Grounded on the Uncanny Valley Theory (Mende et al., 2019; Mori, 1970), we aim to investigate the degree to which the humanization of virtual influencers may impact customers' past behaviour, i.e., intention to follow and intention to purchase. Specifically, we intend to explore if two different virtual influencers, one non-humanized and one high-humanized, induce a sensation of uncanniness and, as a result, diminish past behaviour.

We intend to clarify the potential (dis)advantages of humanizing virtual influencers and the implications for influencer marketing strategies. First, we provide theoretical implications to guide academics in further studies on this under-explored topic. Second, we provide concrete implications to influencer marketing stakeholders in understanding the degree of which anthropomorphism elicits positive emotions in consumers, thereby facilitating the development of effective product and service promotion campaigns via virtual influencers. Overall, the findings will inform the development of guidelines for humanizing virtual influencers in order to enhance positive consumer reactions and promotes effective marketing strategies.

**Methodology.** The objective of the paper is to examine the role of anthropomorphization on positive behavioral intentions. In doing so, we considered two different virtual influencers with varying degree of humanization and examined how feelings of uncanniness shape different consumers' intentions to follow the VI, and to buy a product sponsored by a virtual influencer. Adapted from Choudhry's categorization (2022), we redefined the Mimic-Real Human as a high-humanized virtual influencer (HHVI) - Imma Gram - and the Non-Human as a non-humanized virtual influencer (NHVI) - Nobody Sausage. Imma Gram is a model, brand ambassador and virtual influencer, whose bubble gum pink bob and Asian features has already gained 2,8 million followers to 2023. Indeed, she earned more than 300k followers just after appearing on the cover of CGWorld magazine (Conti et al., 2022). Nobody Sausage is a food shaped virtual influencer, which rose to prominence on Instagram thanks to his bright, hilarious, and funky dancing videos. Indeed, this dancing sausage gained the fastest social growth on Instagram in 2021 (Awdziej et al., 2022). While HHVIs are among others followed for applying humanlike characteristics to the brands due to anthropomorphization, whilst NHVI like Nobody Sausage is followed due to the comical and cartoonish looks and contents (Choudhry et al., 2022).

To compare the two virtual influencers, we used a within-subject experiment on a sample of 254 respondents. The study has been conducted on an online sample of US respondents.

The questionnaire was initially aimed to assess respondents' familiarity with virtual influencers. To this end, we asked them to report: (i) subjective knowledge through a single item (i.e., "I know what VIs are") on a Likert scale where 1 = "Not at all agree" and 7 = "Totally agree"; (ii) past behavior, here intended as they proclivity to follow ("I follow virtual influencers on social media"); (iii) country-of-origin effect (e.g., "I prefer influencers of my own country") on a 7-point Likert scale (1 = "Not at all agree"; 7 = "Completely agree") to control for possible cultural effects, especially because of the presence of virtual influencers with Asiatic traits.

In the second part of the questionnaire, we also considered some constructs that according to extant literature may influence consumers' perceptions. First, we asked respondents to state their degree of conformism based on five items

extracted by Schwartz et al. (2012) (e.g., “Obeying all the laws is important to him”; “It is important to him to avoid upsetting other people”).

In the third part of the questionnaire, we investigated: (i) uncanniness (e.g., “I feel uneasy”) and (ii) socio-psychological distance. To control for the social psychological distance, we used three items by Sands et al. (2022) (e.g., “The influencer Imma Gram/Nobody Sausage is far - near”).

### Sample

The sample consisted of a total amount of 254 UK respondents. Regarding age, more than half were Millennials (61%), and the remaining were mainly belonging to Generation Z (15.4%) and X (16.5%). Most of the respondents have an income lower than 60.000 \$ (76,8%).

### Results. Dimensionality and reliability checks

To obtain a single measure for the variable assessed through multiple items we calculated the average. For each construct, we conducted a factorial and reliability analysis. The analysis showed that all the involved constructs were unidimensional and Cronbach alpha’s were above the threshold recommended by Nunnally (1978).

To estimate the impact of uncanniness on the intention to follow and buy the sponsored product, we conducted an OLS (Ordinary Least Square) regression for each dependent variable. The results are reported in Table 1.

Tab. 1: Regression analysis

	HHVI		NHVI	
	Beta	p-value	Beta	p-value
Uncanniness	-0.07	0.02	0.05	0.11
Conformism	0.07	0.02	0.08	0.01
SPD	0.81	0.00	0.73	0.00
COE	-0.04	0.31	0.00	0.94
Past behaviour	0.03	0.47	0.02	0.60
Age	-0.07	0.02	0.06	0.07
Sex	0.02	0.49	0.03	0.40
Income	0.00	0.99	0.08	0.01

Notes: COE = Country-of-Origin-effect; SPD = Social Psychological Distance; R-Squared<sub>(HHVI)</sub> = 0.81; Adjusted R-Squared<sub>(HHVI)</sub> = 0.80; R-Squared<sub>(NHVI)</sub> = 0.80; Adjusted R-Squared<sub>(NHVI)</sub> = 0.79.

Findings underline that for HHVI the impact of uncanniness was negative and significant on the intention to purchase and follow Imma Gram, while for NHVI the impact of uncanniness was not significant. These results provide useful support for our research hypothesis.

We also found a positive effect of conformism for both virtual influencers, whereas a negative effect of age for the high-humanized virtual influencer. The other variables do not have a significant impact on past behaviour.

**Research limitations.** The current study is not without its limitations. First, we acknowledge that we investigated only two virtual influencers, categorized into two degrees of humanization - high-humanized and non-humanized. Future research could broaden the sample size by including virtual influencers with varying degrees of humanization to further validate our results. Second, our respondents were selected on the basis of their interaction with the virtual influencer exclusively on Instagram. Future studies may consider video-based social media platforms such as TikTok, which is gaining popularity among new generations (Araujo et al., 2022). Indeed, the peculiar characteristics of platforms may influence consumers differently in terms of uncanniness. Third, our research focused on the follower perspective. Future studies may explore the manager perspective if not even the virtual influencer themselves or their creators to gain more insights.

Furthermore, future lines of research could also investigate how virtual influencers facilitate company entry into appealing domains such as virtual communities or metaverse marketing.

Although our results suggest that a high degree of humanization elicits a sense of uncanniness in the follower, more investigation into whether this impact may be moderated by other stimuli, in line with Lou et al., (2022), would provide a more detailed knowledge of the psychological mechanisms underpinning these cognitive responses.

**Managerial implications.** Companies have increasingly begun to leverage virtual influencers as advertising tools. They can tailor their social media presence via virtual influencers to reflect the brand’s image and values and control the content (Conti et al., 2022). On the other hand, companies are concerned about facing different challenges, among which the humanlike appearance of virtual influencers is outstanding (Sands et al., 2022).

From a managerial perspective, brands that leverage virtual influencers for marketing purposes should evaluate the degree of humanization when designing and implementing their campaigns, as a highly humanized virtual influencer may decrease the consumer’s intention to purchase the sponsored products and follow them. Therefore, managers should carefully consider the level of humanization and test it with focus groups to ensure it is well-perceived. Additionally, since a highly humanized influencer induces a sense of uncanniness, they could monitor customers’ emotional reactions, possibly signs of discomfort and negative emotions, to adjust campaigns accordingly.



Furthermore, managers should be transparent about their virtual influencers being non-human entities, as this can impact the credibility and trustworthiness of the brand. Thus, they can implement a campaign of transparency about the operation of the virtual influencers and their control by human beings, to allow greater recognition by their consumers of their fictitious entity.

Moreover, companies should also consider the message they want to convey as well as the product they are promoting to ensure that the virtual influencer's level of humanization matches the brand's image and purpose. Virtual influencers can be an effective tool in a company's marketing campaign. However, companies cannot only rely on them, but should integrate other endorsers to create a comprehensive, omnichannel, and integrated campaign.

**Originality of the paper.** This study advances the literature on virtual influencers, a still under-explored area. Specifically, our research focuses on testing the impact of the degree of humanization of virtual influencers on customers' behavior grounded on the Uncanny Valley Theory. Moreover, our research approach differs from previous studies (Franke et al., 2023; Yang et al., 2022; Lou et al., 2022; Arsenyan and Mirowska, 2021; Block and Lovegrove, 2021) by focusing on the comparison of two distinct virtual influencers with varying degrees of humanization. Our study allows for a more in-depth investigation of the impact of humanization on customers' emotional reactions and past behaviour, particularly intention to follow and intention to buy.

Finally, our findings contribute to assisting marketers and managers who are keen to leverage the power of virtual influencers and AI technology in their marketing efforts, while also ensuring that their campaigns elicit positive behavioural intentions.

**Keywords:** virtual influencers; consumer behaviour; uncanniness; influencer marketing; uncanny valley; endorser

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