



HAL
open science

The authentic virtual influencer: Authenticity manifestations in the metaverse

Bernadett Koles, Alice Audrezet, Julie Guidry Moulard, Nisreen Ameen, Brad Mckenna

► To cite this version:

Bernadett Koles, Alice Audrezet, Julie Guidry Moulard, Nisreen Ameen, Brad Mckenna. The authentic virtual influencer: Authenticity manifestations in the metaverse. *Journal of Business Research*, 2024, 170, pp.114325. 10.1016/j.jbusres.2023.114325 . hal-04298734

HAL Id: hal-04298734

<https://hal.science/hal-04298734v1>

Submitted on 21 Nov 2023

HAL is a multi-disciplinary open access archive for the deposit and dissemination of scientific research documents, whether they are published or not. The documents may come from teaching and research institutions in France or abroad, or from public or private research centers.

L'archive ouverte pluridisciplinaire **HAL**, est destinée au dépôt et à la diffusion de documents scientifiques de niveau recherche, publiés ou non, émanant des établissements d'enseignement et de recherche français ou étrangers, des laboratoires publics ou privés.

The authentic virtual influencer: authenticity manifestations in the metaverse

Bernadett Koles, Alice Audrezet, Julie Guidry Moulard, Nisreen Ameen, Brad McKenna

ABSTRACT

Virtual influencers (VI) are fictional entities operated by third parties (freelance creators, digital agencies, or brands). Despite their increasing popularity, the way people approach these often human-looking yet entirely fictitious creations, and whether they view them as ‘authentic’, remains unclear. Existing conceptualizations of authenticity in the VI literature do not offer sufficient depth and richness to understand this complex phenomenon. Building on the Entity-Referent Correspondence Framework of Authenticity, this paper aims to explore different manifestations of authenticity in the context of VIs. We draw on interviews with consumers (64) and industry experts (11) to unveil different perspectives. Our findings demonstrate how the three types of authenticity—true-to-ideal (TTI), true-to-fact (TTF) and true-to-self (TTS)—apply to and manifest in a virtual influencer context. We conclude with theoretical contributions, with particular attention to the uncanny valley theory, managerial recommendations, and areas for future research.

Keywords: virtual influencer, authenticity, branding, social media, avatars, computer-generated images (CGI)

1. INTRODUCTION

Imagine you are a fashion brand manager on the lookout for the next social media influencer to partner with—one that will help you engage younger generations. You come across the profile of Lil Miquela. She’s the popular Brazilian-American lifestyle influencer and singer from LA, with around 8 million followers across platforms, prior brand collaborations with Chanel, Calvin Klein and Prada, posts showcasing her intimate encounters with the American supermodel Bella Hadid, and recognition by Time magazine as one of the most influential people on the internet in 2018. She sounds perfect. Except for one thing perhaps, she is not real, at least not in the concrete, tangible, and physical sense of the word. She is a ‘virtual influencer’ (VI).

VIs – computer-generated personas that attract followers on online platforms – have been increasing in number, as well as in followership, in recent years (Miyake, 2023). These avatars are entirely artificial fabrications designed using computer graphics software, are developed and controlled by experts and digital agencies, and are given an elaborate personality and engaging storyline that makes them accessible to their audience on social medial platforms (Audrezet & Koles, 2023). VIs ultimately represent innovative extensions to the field of influencer marketing (Cheung & Leung, 2021; Laszkiewicz & Kalinska-Kula, 2023; Miao et al., 2022). They range in appearance from a ‘perfect’ human to a robotic or cartoonish form. Successful examples include Casas Bahia, a virtual teenager gamer from Brazil, and Kizuna AI, a virtual YouTuber from Japan.

Influencer marketing effectiveness regarding human influencers has already been demonstrated (Leung et al., 2022), but our understanding of whether and when VIs can be valuable tools for brands remains limited. When compared to human influencers, VIs have certain advantages (Conti et al., 2022; Ameen et al. 2023). From a management standpoint, they are always available, easily controllable (Drenten & Brooks, 2020), and are associated with reduced PR risks and scandals (Duffy & Hund, 2019). VIs also provide new opportunities for brands, offering greater adaptability, customization (Robinson, 2020), brand community enhancement (Sands, Ferraro, et al., 2022), and unlimited storytelling (Moustakas et al., 2020). Furthermore, VIs do not age (unless their creators decide they do), and can be associated with infinite unique and creative storylines, such as displaying fashion items being on fire on a virtual catwalk. This contemporary and state-of-the-art communication strategy is often associated with reduced follower fatigue – especially among younger consumers (Audrezet & Koles, 2023) – and has been shown to trigger higher user engagement rates (Baklanov, 2019). Research also demonstrates that consumers are equally open to following a virtual or a human influencer (Sands, Campbell, et al., 2022). Similar to human influencers, VIs elicit positive brand attitudes, word-of-mouth, and higher purchase intentions (Thomas & Fowler, 2021).

In the human social media influencer literature, authenticity has been increasingly emphasized as a fundamental characteristic of their appeal to followers, and as such critical for brands wishing to

promote their products to these followers via the influencer (Audrezet et al., 2020; Lee & Eastin, 2021; Moulard et al., 2021; Pöyry et al., 2019). Yet, the commercial opportunity offered to human influencers in exchange for promoting a brand's portfolio may encourage influencers to endorse products in which they are not spontaneously and genuinely interested. Such influencer-brand partnerships may trigger perceptions of institutionalized brand encroachment (Hudders et al., 2021), which may ultimately threaten the influencers' authenticity.

Having established the importance of authenticity for human social media influencers, the rise of interest in VIs is highly counterintuitive. Beyond the commercial threat to authenticity inherent to all types of influencers, the very essence of these virtual characters blurs the fine line between what is usually considered by users as 'real' entities, raising once again the issue of authenticity. Indeed, VIs are expected to possess human attributes such as empathy (Mrad et al., 2022) and human likeness (Mirowska & Arsenyan, 2023; Um, 2023). Consequently, an intriguing question arises as to how VIs – which are not 'real' – can effectively promote brands if consumers value authenticity in human influencers. In other words, can VIs be viewed as authentic in the first place, and if so, how does such authenticity manifest itself? Existing conceptualizations of authenticity in the VI context remain limited and vary across studies, necessitating further research.

To answer these questions, in the current work, we engage the Entity-Referent Correspondence Framework proposed by Moulard et al. (2021) to identify the various meanings of authenticity in a VI context. Moulard et al. (2021) define authenticity as the consumer's perception concerning the degree to which an entity corresponds or is 'true to' something else – a 'referent'. Further, three referents are proposed—an *ideal*, a *fact*, and a *self*—resulting in three general authenticity types: true-to-ideal, true-to-fact, and true-to-self. Other competing conceptualizations of authenticity in marketing acknowledge that authenticity is a multi-faceted concept. However, these prior conceptualizations do not recognize the distinctness of the proposed facets/types – and that each facet/type has its own nomological net with distinct antecedents and consequences. Moulard et al. (2021) demonstrate how these three types materialize within a brand context, identifying several variations of each type. Similarly, the ERC

Framework may be a suitable lens to explore the potentially different facets of an 'authentic VI'. A comprehensive exploration of the multiple meanings of authenticity in the VI context is highly prevalent, considering the anticipated potential of VIs to serve not only as lucrative future brand ambassadors but also as a gateway to ease consumers' transition to related emerging technologies such as virtual reality and the metaverse (*The Ultimate Virtual Creators Report, 2022*). Similarly, virtual influencers might deliver special advantages in service-oriented industries such as travel and financial services, where they might be able to support the staff by creating emotional connections between firms and their customers (Miao et al., 2022).

This study builds on empirical evidence obtained from two sources: 11 interviews with industry representatives with notable expertise on VIs, and consumer interviews with 64 young adults who follow social media influencers. Exploring the different manifestations of authenticity and leveraging the multitude of perspectives in our data, we extend existing work to offer a comprehensive framework and conceptualization of VI authenticity. We conclude the paper by presenting managerial implications to help brands successfully navigate this novel and innovative area.

2. LITERATURE REVIEW

2.1 Virtual influencers - General overview

A VI is a fictional character on social media operated by a third party (freelance creator, digital agency or brand) who defines its appearance, personality and storyline for influence (Audrezet & Koles, 2023). These complex digital characters leverage multiple technologies for their development, implementation, maintenance, and operation, including video, Web 3.0, blockchain, non-fungible tokens (NFT), chatbots, avatars, Computer-Generated Imagery (CGI), and artificial intelligence (AI). Unlike other AI-driven technologies, like virtual assistants or chatbots that rely primarily on pre-programmed and scripted answers to questions (Tsai et al., 2021; Wang & Hu, 2022; Conti et al., 2022), most VIs are largely dependent on the development team behind them and – at least for now with existing technology – are not entirely autonomous.

The origins of VIs are often traced back to Brazil, where Lu Do Magalu was first introduced as a virtual mascot in 2003 to represent local e-commerce sites. In 2009, her developers launched her YouTube channel, which eventually evolved her role into becoming the first VI, attracting over 30 million followers across multiple platforms. Following this success, more VIs emerged worldwide. To this day, one of the biggest VI success stories is Lil Miquela, a robot singer, lifestyle influencer and activist with more than 8 million followers across social media platforms. A recent classification conducted by VirtualHuman.org – a database cataloguing VIs with a certain followership threshold – estimates around 200 VIs are operating as of today. However, their true number, reach, and impact remains difficult to capture with complete accuracy, given their rapid evolution and emergence (Audrezet & Koles, 2023).

VIs can take on different forms and can be differentiated by certain characteristics that include their appearance, the controlling entity, their history, and their primary purpose or positioning. For illustrative purposes, Table 1 presents an overview of these categories, offering further details of those VIs that are mentioned throughout the paper.

Table 1 will go here.

Appearance. Appearance is the first and most obvious differentiating feature among VIs, which can range from VIs embodying a rather convincing human façade, such as Lil Miquela or the supermodel Shudu, to others whose appearance is completely ‘non-human’ or ‘anime-like’, enabling looks with practically unlimited possibilities (Arsenyan & Mirowska, 2021). Some examples of the latter include the Japanese 2D cartoon character ‘Kizuna AI’; the ‘B.’ shaped as a cartoon ‘bee’ with a mission to raise awareness for bee protection; and ‘Nobody Sausage’ – the 3D dancing stick whose short videos can be viewed on TikTok and who advocates happiness, joy and inclusivity, with a particular target of Generation Z in mind (Audrezet & Koles, 2023).

Control. Concerning the entity behind the digital persona, most existing VIs have been created by independent digital agencies, who, in turn, negotiate contracts with brands who envision incorporating VIs into their marketing strategy. In this sense, VIs that do not belong to a specific brand can be viewed as ‘virtual free agents’, open to partnering with any brand. For instance, Imma

collaborated with IKEA in 2020, which entailed curating her own fully furnished apartment that could be observed and explored by her followers on social media platforms. Such partnerships between virtual free agents and brands are particularly advantageous in representing a low-risk approach for reaching new and younger audiences and obtaining fast feedback and reactions from them (Audrezet & Koles, 2023).

Brands can also develop VIs (Foster et al., 2021). Branded VIs are similar to well-established brand spokes-characters (Garretson & Niedrich, 2004), such as Tony the Tiger. As with spokes-characters, branded VIs are brand-created with the sole purpose of endorsing brands and their products. Branded VIs, however, go beyond spokes-characters by offering companies the opportunity to develop interactive storylines that engage their audience while staying true to and consistent with their brand values (Audrezet & Koles, 2023). For instance, LVMH created Livi, their new face of innovation, who serves as the hostess for shows, events, and start-up competitions and is empowered to represent the brand vis-à-vis the greater community engagingly and innovatively. The storyline for virtual-spokes characters is rather elaborate, albeit highly controlled, with the communication executed strategically to fit the brand's image and mission.

History. There are 'born' VIs – like Lil Miquela or Imma – created with the sole purpose of influence in mind. In addition, there are other VIs that 'evolved' from an earlier role, form, concept or entity and, as such, have a history before becoming an influencer. 'Barbie' – the infamous Mattel doll with a multi-decade history – provides a good example, who more recently started hosting Vlogs on YouTube, accruing a follower base of over 14 million subscribers across platforms.

Positioning. The development and launch of VIs might be driven by different motivations and purposes, which in turn will likely impact the VIs' persona and storyline. Based on the currently existing VIs, two notable categories emerge. On the one hand, similar to social media influencers, there are VIs that are expertise-oriented, and as such, they represent special interests and niche topics. Examples include Shudu Gram (fashion and modelling), Chef Jade (culinary delights), Livi (innovation), and Imma (lifestyle). In addition, some VIs are created to raise awareness of special causes, including B., the

cartoon VI who fights for bee protection; Quitéria Jesus, the Brazilian VI who promotes body positivity and expresses her views on harassment and various stereotypes; and Kami, a VI with Down syndrome, who advocates for a more inclusive digital world. For expertise- and cause-oriented VIs, the community becomes key, gathering a group of like-minded individuals sharing the interest and passion for the same topic. On the other hand, some VIs are predominantly entertainment-oriented, developed for purely entertainment or hedonic purposes, bringing joy, laughter, and a moment of distraction and escape for their audiences. As an example, Nobody Sausage appears in short videos primarily on TikTok, where the idea is not to develop deep content and extensive storylines but rather to offer brief instances of light and positively charged material. It is important to note that VIs' orientation is not necessarily static nor exclusive. Some VIs are best envisioned along a continuum between entertainment and expertise, as they capture aspects of both. For instance, Lil Miquela, who might be positioned as a lifestyle influencer and a singer, also supports movements (e.g., Black Lives matter) and causes (e.g., LGBTQ+), while also providing entertainment for her audience with her stories and dramas.

2.2 Prior research on virtual influencers

Overview of previous research. An increasing number of studies have emerged recently, specifically exploring the phenomenon of VIs, along with adjacent topics like computer-generated imagery and digital avatars. Table 2 presents a summary of existing empirical work, categorized by their research focus – whether the studies concentrate on VIs, consumers, or brands, outlining the key themes and variables explored.

Table 2 will go here.

As demonstrated in the table, many studies explored VIs in comparison to their human counterparts to gain a more comprehensive understanding of their effectiveness, benefits, and potential downsides. Scholars studied various aspects of VIs, such as authenticity, human likeness, and identity formation, along with relational ones that capture positive or negative interactions within the online community. As for consumers, studies explored certain self-oriented features like empathy and

the need for uniqueness in terms of their impact on influencer-driven outcomes like user engagement or purchase intention. Finally, although in relative terms, fewer studies to date explore brand-level processes and outcomes, some contemplate advertising efficiency and propose strategic options. Of the 19 empirical papers identified, 5 used qualitative interviews, a single study relied on the case method, and the remaining employed experiments or online surveys, sampling mostly from young adult populations globally.

VIs and Uncanny Valley Theory. As noted, these creative artificial fabrications capture a wide variety of human- and non-human attributes; although humanoid VIs have triggered particular attention due to their similarity to humans, albeit being entirely digital, which may provoke feelings of eeriness or unease in consumers (Arsenyan & Mirowska, 2021). In fact, the most prominent framework employed to discuss human reactions towards robots and other digital characters tends to be associated with the uncanny valley theory (Mori, 1970; Mori, 2012). Originally used to analyze literary fiction, the term ‘uncanny’ refers to situations that trigger intellectual uncertainty (Freud, 2004). The uncanny valley theory posits that consumers tend to respond positively to artificial faces that have a realistic human appearance, but only up to a certain point. Once the artificial faces become too realistic, they might be frightening to the extent that they might induce rejection (Ho & MacDorman, 2010; Mori et al., 2012).

According to the uncanny valley theory, reactions to human-like creations can range from empathy to fear or rejection, as it approaches but fails to achieve a fully human-like appearance. To illustrate this uncanny effect, a prosthetic hand has been used in some seminal work (Mori, 1970; Mori, 2012). As soon as the hand reaches a certain degree of similarity to the human form, one can be deceived by the prosthetic hand if it moves like a human hand. When someone realizes that it is not a human hand because of its texture or coldness, one may feel a sense of eeriness. Many propose that the blurring appearance of robots and humanoids might create such a feeling, warranting further exploration. Nonetheless, it is important to note that uncanny valley theory has not been clearly confirmed in the context of VIs, necessitating further research.

Xie-Carson et al. (2023) confirm that there is a gradual progression in user reactions moving from 2D animated VIs, passing through 3D animated VIs, and finally reaching human-like VIs, with the least preferred influencers being 2D animated VIs. However, when comparing VIs to human influencers, researchers suggest that human-like VIs tend to receive significantly fewer positive reactions to their posts (Arsenyan & Mirowska, 2021), which seems to confirm the uncanny valley hypothesis. Similar patterns are proposed to emerge in studies that explore the advertising effectiveness of VIs. When compared to human influencers, VIs tend to be associated with lower trustworthiness (Sands, Campbell, et al., 2022) and less favorable attitudes towards the sponsoring brand (Franke et al., 2022), suggesting that VIs might induce a rejection effect in commercial contexts. On the other hand, in studies where VIs are not compared to human influencers, the perceived human likeness of the entity improves respondents' attitudes towards it (Um, 2023). Importantly, respondents also show superior reactions to VIs when the virtual nature of the VI is disclosed (Franke et al., 2022; Mirowska & Arsenyan, 2023). This is in contrast to situations when the 'robot' identities of VIs are not fully disclosed (Franke et al., 2022; Mathur & Reichling, 2016), where additional concerns might arise about the VIs' authenticity.

VIs and Authenticity. Despite its relevance, only a handful of studies addressed the issue of authenticity with specific attention to VIs. In one paper, Block and Lovegrove (2021) employed a case study analysis of the communication and strategy associated with Lil Miquela's profile, conceptualizing authenticity as a 'staged' and context-bound perception of genuineness, which in her case means being authentic in her own digital context as long as she achieves social media impact through her – and her developers' – storytelling skills. Building on a combination of netnography and in-depth interviews, Antonio Batista da Silva and Paula (2021) identify five categories to understand VIs, one of which was authenticity; although the authors use the term almost interchangeably with trust.

Lou et al. (2022) coin the term 'authentically fake' when referring to VIs, suggesting that VIs can deliver value to firms via boosting brand awareness but not purchase intention. The authors use a rather superficial conceptualization of authenticity, often mixed with other concepts like the uncanny valley and parasocial interaction theories. Finally, Um (2023) employed a survey design to explore predictors

influencing the effectiveness of advertising using VIs to understand their appeal, concluding that human likeness, perceived predictability, and perceived authenticity have a positive impact on consumer attitudes towards VIs. It is important to note that perceived authenticity in this study was measured using a five-item construct developed by Yunseulchoi and Lee (2013). Overall, these studies demonstrate that while there are a few scholarly attempts to explore authenticity in the context of VIs, existing works do not embrace a multi-dimensional conceptualization, which in turn, falls short of recognizing the richness and complexity underlying the phenomenon of authenticity.

2.3 Prior authenticity research in marketing

Significance of authenticity and attempts of definitions. Prior research suggests that authenticity is a cornerstone of modern consumption and is an important factor in evaluating products and brands (Brown et al., 2003). Authenticity is shown to positively affect a variety of consumer responses, such as stronger perceptions of brand trust and brand equity (Napoli et al., 2016), more resilient consumer-brand relationships (Johnson et al., 2015), increased emotional brand attachment and positive word of mouth (Morhart et al., 2015), and more willingness to pay a price premium (Newman & Dhar, 2014). Authenticity's importance and appeal to consumers extends beyond the traditional branding context, as the concept is highly relevant to human brands, such as celebrities (Moulard et al., 2015), athletes (Kucharska et al., 2020), artists (Moulard et al., 2014), and most recently, social media influencers. Indeed, social media influencer's authenticity is a primary reason why brands have increasingly used these influencers to promote their products (Duffy & Hund, 2019), a practice which, ironically, may negatively affect the influencer's authenticity (Audrezet et al., 2020; Hudders et al., 2021).

Despite the widespread acknowledgement that authenticity is a valuable attribute in many marketing contexts, its meaning has been elusive (Beverland & Farrelly, 2010). Prior research in marketing is in agreement that, at an abstract level, authenticity refers to consumers' perceptions that something is true, genuine, or real. Further, this prior work is in agreement that authenticity is more nuanced and, thus, is associated with several distinct meanings, such as types or dimensions (Beverland & Farrelly, 2010). As such, various typologies or multi-dimensional models of authenticity have been

proposed (Grayson & Martinec, 2004; Morhart et al., 2015; Napoli et al., 2014; Nunes et al., 2021; Spiggle et al., 2012). However, while this literature illustrates authenticity's subtleties, disagreement remains concerning how many meanings of authenticity exist and what these different meanings entail (Moulard et al., 2021). Within the research on brand authenticity, these types/dimensions range from two to six. And while particular meanings appear congruent across studies, some meanings show little conceptual overlap with those proposed in other typologies/models.

The Entity-Referent Correspondence Framework of Authenticity. A recent conceptual paper attempts to consolidate this research. The Entity-Referent Correspondence (ERC) Framework of Authenticity (Moulard et al., 2021) distinguishes three general types of authenticity—*true-to-ideal*, *true-to-fact*, and *true-to-self*. The authors further demonstrate that these three types have multiple manifestations in a brand context, and that the various types/dimensions of brand authenticity identified in prior models are specific manifestations of these three types. For instance, of the four dimensions identified by Spiggle et al. (2012), three are manifestations of true-to-ideal authenticity, and one is a manifestation of true-to-self authenticity.

The ERC Framework proposes that authenticity, at the most general level, is determined by comparing the focal entity (e.g., product, brand, etc.) to a referent (a point of reference). The more the focal entity corresponds with (or is 'true to') the referent, the greater the authenticity. For example, a tourist will conclude that a woman seen in Paris (entity) is authentic if the woman corresponds to (or is 'true to') '*La Parisienne*'—the quintessential Parisian woman (referent). While all three authenticity types involve the degree to which an entity corresponds to a referent, the types are distinguished by their unique referent—an ideal, fact, or self. (See Table 3 for more details).

Table 3 will go here.

True-to-ideal (TTI) authenticity is defined as "a consumer's perception of the extent to which an entity's attributes correspond with a socially determined standard" (Moulard et al., 2021, p. 99). Being a socially-determined standard, an ideal (the TTI referent) is a social construct—a man-made definition or abstraction that does not exist outside of human consciousness (Guba & Lincoln, 1994; Leigh et al.,

2006). Returning to the above example, *La Parisienne* is a socially constructed ideal since humans have determined its attributes. Styles, genres, and traditions are based on human-determined ideals. Thus, a newly built home in Charleston, South Carolina (entity's attributes) that conforms with the traditional style of homes in that region (ideal) would be considered authentic (TTI). On the other hand, a poet's work (entity's characteristics) that does not follow the poetic genre (ideal) would be considered inauthentic (TTI). Further, an ideal may change over time and may be disputed (Brown et al., 2003; Wang, 1999). This resonates with the concept of *La Parisienne*. The social construct has evolved over the years, and while there are strong commonalities across imageries of *La Parisienne*, disputes exist over what constitutes the ideal Parisian woman. This is depicted by Alice Pfeiffer (2019) in her recent book '*Je ne suis pas Parisienne*' (i.e., I am not a Parisian woman), where the author questions the myth of this slender chic woman with long, light brown hair without a care in the world, reading a book in the Parisian quartier of Saint-Germain-des-Prés. Reminding her readers that Parisian women represent a wide range of diversity in terms of racial background, religion, gender orientation and physical appearance, Pfeiffer (2019) provides new ideals for *La Parisienne*.

True-to-fact (TTF) authenticity is defined as "a consumer's perception of the extent to which information communicated about an entity corresponds with the actual state of affairs" (Moulard et al., 2021, p. 100). TTF authenticity entails whether a claim is *true to* events that have actually occurred or with a physical entity's innate properties – with fact (the TTF referent). An eyewitness's testimony at a court trial (entity's claim) is authentic (TTF) if it describes the events that occurred (fact). On the other hand, a LinkedIn account with the name of John Doe (entity's claim) is inauthentic if the person who created the account is not John Doe (fact). Thus, with TTF authenticity, one asks, "Is that which is presented to me actually the case (i.e., fact)?" A fact (TTF referent), unlike an ideal (TTI referent), is a phenomenon that exists outside of human consciousness. Rather than being a human fabrication subject to fluctuation (ideal), a fact is grounded on a fixed, underlying reality.

True-to-self (TTS) authenticity is defined as "a consumer's perception of the extent to which an entity's behavior corresponds with its intrinsic motivations as opposed to extrinsic motivations"

(Moulard et al., 2021, p. 103). TTS authenticity entails whether a person's or organization's actions are *true to their true calling* (intrinsic motivation) rather than driven by external rewards or punishments (extrinsic motivation). People or firms that exhibit TTS authenticity are driven by their passion and commitment rather than by the potential for profits or prestige or fear of criticism or rejection. A political candidate is authentic (TTS) if he votes for passing a bill (entity's behavior) on an issue that he deeply cares about (self)—even if the issue is highly unpopular with his constituents. On the other hand, a musician is inauthentic (TTS) if the music he creates (entity's behavior) differs from music he finds personally gratifying (self) but instead caters to the mainstream market and, thus, increases his profits. Similar to a fact (TTF referent), the self (TTS referent) is perceived as a fixed reality – a set of innate, immutable characteristics (Jung, 1953). However, a self is psychological in nature, which distinguishes it from a fact.

As this work is entirely conceptual, the ERC Framework offers a deeper theoretical exploration of authenticity compared to prior empirical work, providing three conceptual contributions outlined by MacInnis (2011). First, since all three authenticity types involve *entity-referent correspondence*, the ERC Framework offers what MacInnis describes as an *integrating contribution*. That is, the framework offers a “higher-order perspective on how these entities [i.e., the authenticity types] are related” (MacInnis, 2011, p. 146). Prior research had not offered such integration of the types/dimensions other than suggesting their types/dimensions are associated with synonyms of authenticity – true, real, and genuine. Second, because the ERC Framework proposes each authenticity type as distinct due to its unique referent (ideal, a fact, or a self), the framework offers a *differentiating contribution*. MacInnis describes this type of contribution as “distinguishing, parsing, dimensionalizing, classifying, or categorizing an entity (e.g., construct, theory, domain)” (MacInnis, 2011, p. 145). Thus, the ERC Framework dimensionalizes the general authenticity construct into three types.

Third, the ERC Framework suggests unique antecedents and consequences for each authenticity type, as well as how the types may affect one another (although not described above). In all, the framework offers 23 propositions. As such, the ERC Framework provides a *delineating contribution* in

that it offers a “propositional inventory” that depicts or describes “an entity [i.e., each authenticity type] and its relationship to other entities” (p. 138). Because each referent has unique properties, the process through which an individual determines whether something is authentic (i.e., antecedents) differs across the three types. Rather, prior research conceptualizes and models the authenticity types/dimensions as components of a higher-order construct in which the antecedents affect this higher-order authenticity factor. Additionally, the authors demonstrate that the types/dimensions identified in prior research can be classified within their three types.

As noted, the three authenticity types proposed in the ERC Framework materialize in various ways for each of the three general authenticity types. For instance, Moulard et al. (2021) explain that true-to-ideal authenticity manifests in four different ways concerning brands. Similarly, these three general authenticity types proposed within the ERC Framework can serve as a foundation to decipher the meanings and manifestations of authenticity in the specific case of VIs. Thus, we collected data to explore whether VIs could be perceived as TTI, TTF and/or TTS authentic.

3. METHODS

Given the recent emergence of VIs and the limited focal research available, the current project is exploratory and consequently employs the qualitative interview method.

3.1 Data Collection

Insights were gathered from a series of interviews conducted between 2021 and 2022 with industry experts (sample 1), which were complemented by interviews with a young social media audience (sample 2). For sample 1, we interviewed 11 industry representatives with notable expertise in areas such as ‘VIs, ‘virtual reality’, ‘avatars’ and the ‘metaverse’ (see Table 3 for further details on the profile of participants). Questions revolved around general perceptions concerning the VI landscape, business perspectives (management, resources, brand collaborations, etc.), insights and contemplations about authenticity, and future prospects for the field. Slight adaptations to the questionnaire were made based on the expertise of each participant. Appendix A provides an example interview guide used

with digital agency experts. Participants were recruited by contacting relevant members in the greater personal and professional network of the two lead authors and their institutions. Subsequently, the snowballing method was employed to secure further leads.

Table 4 will go here.

Sample 2 included 64 participants from Northern Italy¹ who were frequent – at least daily – users of social media platforms and who declared following a minimum of one (human) social media influencer. In Italy, 76% of Instagram users are between 14 and 29 years of age, and 52.9% are female. Our sample is representative of these demographics, with participants aged between 18 and 29 and well balanced in terms of gender (28 males and 34 females). The interview guide (Appendix B) captured various themes, including digital experience (gaming and social media), relationship with social media influencers, and reflections concerning the focal topic of VIs. Participants who were not familiar with the concept of VIs were provided with a brief explanation, and all were shown a short video presenting concrete examples (e.g., brief excerpts showcasing Lil Miquela and Shudu Gram). This process enabled the elicitation of spontaneous reactions regarding the VI phenomenon to be revealed and elaborated upon, even in the case of participants who were not initially aware. The final phase of the interview focused more specifically on consumers' perception of VIs, with particular attention to their authenticity and expected future development and outlook.

The interviews for both participant groups were held either in person or online and lasted between 30 to 60 minutes. Participation was completely voluntary. Interviews from the two samples were recorded and transcribed. In total, our corpus of qualitative data included 167,586 words capturing all the transcribed interviews.

3.2 Data Analysis

In this paper, the Entity-Referent Correspondence Framework (Moulard et al., 2021) was employed as a theoretical lens to explore the meanings of textual data. It is important to note that the

¹ According to Statista (2023), over 43 million individuals in Italy are social media users and social media penetration in Italy is 71.65%. With such figures, Italy is a representative country to study a social media phenomenon.

theoretical approach of qualitative interpretive research is not to test hypotheses but rather to use theory as a sensitizing device (Klein & Myers, 1999). Furthermore, the aim of interpretive research is not to generalize to a population but rather to generalize to theory (Lee & Baskerville, 2003).

A two-layered analytical approach was employed to analyze the data. The first phase involved generating an initial understanding of the qualitative material through a global reading without any pre-existing analytical grid (Wolcott, 1994). During this initial phase, the Entity-Referent Correspondence Framework proposed by Moulard et al. (2021) was employed as a theoretical lens to conceptualize the authenticity of a VI. The second phase entailed classic thematic content analysis (Patton, 2015). More precisely, building on the three types of authenticity defined in the Entity-Referent Correspondence Framework, we organized the data across the three core themes of true-to-ideal, true-to-fact, and true-to-self authenticity, as they manifested themselves in the specific case of VIs. Continuously reiterating these three core themes, new emerging verbatims were constantly compared with previous ones in order to test, expand, and refine the themes and sub-themes. This process enabled the authors to establish the components of the themes and sub-themes in the context of VIs. To confirm this analysis, one of the authors, who was not involved in the initial definition of the themes, coded the quotes from the interviews separately, allocating them to the themes and sub-themes identified by the rest of the team. Finally, through multiple rounds of discussion, potential uncertainties or disagreements were resolved and a final interpretation of the interviews was established.

In the following section, we discuss each emerging theme with examples for support based on insights from the two samples. References will be made for the interview excerpts derived from Sample 1 by the alias assigned to them, whereas from Sample 2 by a participant number (i.e., Consumer 1, 2, etc).

4. FINDINGS

Based on the ERC Framework, TTF authenticity is the fundamental authenticity type in understanding the use of the adjective “virtual” in labelling these digital entities. Because VIs are manmade creations with no underlying reality, they have no fact referent. As such, VIs are TTF

inauthentic—not real. Rather, being artificial fabrications, VIs are social constructs—or ideals. As such, a VI can be *TTI authentic* if their characteristics match the VI ideal referent—expectations of what the VI should be like. Lastly, since VIs have no underlying human reality, they cannot be TTS authentic. VIs have no self-referent and, thus, no intrinsic motivation. Thus, a strict interpretation of the authenticity types suggests that VIs can only be TTI authentic. Nonetheless, while the VI itself cannot be TTF and TTS authentic, building on our qualitative data and analysis, we demonstrate that TTF and TTS authenticity do manifest in a VI context. These various manifestations are discussed in the following sections, which are illustrated in Figure 1 and described in Table 5.

Figure 1 will go here.

Table 5 will go here.

4.1 Manifestations of VI True-to-Ideal Authenticity

As discussed, TTI authenticity entails the degree to which an entity corresponds with a socially constructed ideal. In the context of VIs, the data revealed three primary “ideals”—or expectations—of VIs: human, virtual entity, and character, resulting in three manifestations of TTI: TTI Authentic Human, TTI Authentic Virtual Entity, and TTI Authentic Character.

TTI Authentic Human. *TTI Authentic Human refers to the degree to which the VI’s attributes correspond to a humanlike ideal.* Correspondingly, the ideal for TTI Authentic Human is “humanlikeness”; a notion that surfaced widely throughout the interviews. In fact, most of the interviewees stressed the importance that the VI be humanlike, as represented by the quotes below:

“...when you say she [VI] is human, then she...has to match that...” (Gabrielle)

“When a VI shows a human side of themselves, I am more inclined to trust them.” (Consumer 10)

“I would be interested in a VI, especially if she tells me things I can identify with or deals with issues I’m interested in. The more real she is, the more I’m inclined to see her as real.” (Consumer 12)

Interviewees also mentioned several humanlike characteristics of VIs that make them authentic. First, *humanlike behaviors* were noted, suggesting that consumers expect VIs to “*behave like a human*

(communicating in a highly interpretable way)” (Luke), and to “show human emotions” (Gabrielle, Adrienne, and Martine).

VIs human-likeness perception was also echoed in the consumer interviews, drawing direct comparisons in the behaviors with human social media influencers.

“Looking at Lil Miquela’s profile I notice that there are few differences between the social activities of Chiara Ferragni and what Lil Miquela does on her personal profile. The type of content is similar, and therefore Lil Miquela’s content also appears real as she posts photos of her everyday life driving a car, in a pool with friends.” (Consumer 8)

“I also think that from the point of view of the virtual influencers, it’s brilliant that they have created a realistic storyline that they tell on social media.” (Consumer 20)

Relating to the narrative, Adrienne had a particularly interesting comment, suggesting that VIs can achieve “depth” like a normal human by creating a “bible” – which she envisions to capture a rich description of the VI’s character that creators can follow when crafting storylines. Martine, currently working on the development of a VI, further elaborates:

“I want to keep all of the complexities of humans in my character. They are as human in their emotions as a real human is since it will be addressing humans. They can use a wide array of emotions, they’re allowed to be angry, they’re allowed to be impertinent, they’re allowed to be happy, they can make mistakes, be rude, be excessive. They will be as human as they can be, at least in the emotions available to them”.

Concerning the emotional abilities of VIs, consumers appeared somewhat more reluctant when compared to experts. When shown the example of Lil Miquela’s post where she was crying because she broke up with her boyfriend, consumers were often quite skeptical as they criticized VIs for not being able to feel emotion and empathy, which they considered to be the cornerstone of developing trust. This was particularly the case for consumers who were more active followers of human social media influencers. Nonetheless, the excerpt below presents an interesting alternative perspective, emphasizing the role of the community:

“Initially I might feel sorry, I might almost forget that she’s an avatar. It’s interesting to think that this post has received so much feedback from her followers. The most interesting output is the creation of communities like Miquelitis which share comments and opinions below Lil Miquela posts. That is a great element that encourages inclusiveness and discussion about social debates”. (Consumer 11)

The importance of the audience and the community has been raised by other participants as well. In fact, many VIs communicate with their audience and other noteworthy individuals (e.g., celebrities) or even other VIs outside their own storyline on social media, which requires that the VI has its own social media account (also humanlike; Gabrielle). Their characters' storylines are further deepened by discussing the VI's humanlike origins. For instance, as Quentin explains in regard to LVMH's virtual spokes-character, Livi:

"...she has dads and mothers who are young, not so young, who come from the seraglio of our time, with all the social issues.."

For some VIs, family members are not simply discussed. Rather, separate VI family members are created and interact with the focal VI, again showcasing the VI's humanlike behavior. Jason illustrated this in his description of Mia, a VI he created:

"I'm launching, uh, her family as well. So, I'm currently working on her brother, whom we will be launching here shortly."

In addition to interacting with other VIs, interviewees stressed that VIs should demonstrate their humanness by interacting with humans. Quentin notes that Livi *"had to be able to interact with other humans"* and points out that Livi has *"interviewed people...But people at Moët and Chandon who we're working with now, people at Dior... and so it gives a kind of reality to the character"*. Speaking quite passionately during the interview, Quentin made specific reference to Livi's participation in the LVMH Innovation Awards:

"so that's where it was very interesting, is that Livi was put on stage, who presented the ceremony, who co-presented with a presenter, and she was really on stage, and it was mind-blowing...Bernard Arnault was brought into the metaverse, and so there was an exchange between Livi and Bernard Arnault. Everyone applauded. It was quite a hallucinating moment... she interviewed humans, on an equal footing..."

VIs can also showcase their humanlike behaviors through their *pursuits and creativity*. As an example, Jason described Mia's endeavors to capture event organization as well as talents that extend beyond hospitality:

"So Mia started doing, um, parties...at a couple venues here in Miami. And so, she's kind of like the host or the promoter of the party... [...] She's gonna create content. That's talking about the process of designing... That's talking about the manufacturing of designing... she's going to then,

you know, she's gonna be in a digital lookbook herself. And then she's also going to kind of creative direct, uh, another model in the clothing, in the physical."

The above quotes represent the diverse potential underlying VIs, attributable to their behaviors, storylines, history, and creative potential – with particular attention to blurring the lines between offline and digital interactions and experiences that represent engagements above and beyond the capabilities of human influencers.

In contrast to the general enthusiasm concerning the VIs' novelty, the creativity and innovative nature, elements of the discrepancy between expected and typical human behavior vis-à-vis the actual VI behavior also emerged, which might, in turn, generate perceptions of inauthenticity.

"While a conversation with a real person can have a greater element of surprise; moreover, non-verbal communication is another important element for me within the interaction because through the facial expressions and body movements of a person it is possible to understand the real feelings and state of mind of that person. On the contrary, a virtual influencer I don't think can be endowed with this ability, because I think their reactions and their non-verbal language will always follow their words". (Consumer 8)

"The biggest limitation is the fact that virtual influencer is not human, and this could limit me in an interaction or conversation. I would find it hard to trust them because the relationship would lack the emotional and empathetic side that you have with a real person". (Consumer 16)

Adrienne shared additional reflections that implied VIs to be TTI Human inauthentic since they never question anything and are "docile". As such, one of the biggest benefits of VIs—the ability to control the VIs and, thus, avoid scandals—also makes VIs less TTI Human Authentic.

A humanlike *appearance* was important to reflect TTI Authentic Human but much less so than humanlike behaviors. Many interviewees drew parallels between the appearance of human influencers and VIs. For instance:

"Human influencers use Photoshop to create facial features such as perfect skin which is what virtual influencers are on social media". (Consumer 25)

Several participants – like Gabrielle and JianGuo – highlighted the current technical limitations that prohibit creators from developing VIs with humanlike characteristics, particularly the difficulties in creating videos. JianGuo made a comment about his company – being at the forefront of avatar and character creation that most closely resemble real persons – being "*ahead of its time*", similar to Second Life. Luke also emphasized the importance of "a video medium for more lifelike interaction".

Interestingly, VIs that looked too perfect were criticized; they could have potentially negative consequences, as they set unrealistic standards. Gabrielle argued that “perfect” VIs are inauthentic since most humans have flaws. Martine discusses this problem with specific reference to the LVMH group’s Livi, a human-looking VI:

“...she’s pretty, she’s skinny. Many influencers, when you look at Lil Miquela, etc, are part of some discussions ... where things such as inclusivity are discussed a lot, and despite that, these [flawless] virtual influencers are going backwards in a way that isn’t socially acceptable.”

Also surfacing was the debate over the human ideal, as expressed by Quentin: “...*what is perfect for us Westerners is perhaps not perfect for the East or for other people*”, emphasizing the relevance of cultural variations in standards and expectations.

Overall, the dimension TTI authentic human captured actions and behaviors expected from influencers at large; emotional manifestations that are spontaneous and give room for deviations from a stable norm; a consistent rich narrative that defines the VIs’ persona, incorporating a history, a family and social interactions with other VIs, celebrities, and the community; and appearances that are not too perfect for undermining the VIs’ human-likeness and users’ demonstrated preference for inclusivity.

TTI Authentic Virtual Entity. As confirmed by the breadth of rich consumer and expert insights on the TTI Authentic Human dimension, the point of reference for VIs voiced by most participants in our sample was human influencers. At the same time, while a VI’s humanlike appearance, behaviors and storylines reflect authenticity, a VI can still be TTI authentic even if the VI lacks these humanlike attributes. That is, for some VIs, humanlike-ness is not the *ideal*. Rather, the VI may identify as a non-human or virtual entity, in which case its non-human virtual identity becomes the ideal.

Building on this, *TTI Authentic Virtual Entity* refers to the degree to which the VI’s attributes correspond to a non-human virtual ideal. For instance, Gabrielle notes that the VI Lil Miquela’s character is a robot, and as long as she corresponds with the robot ideal, she’ll be perceived as authentic:

“Lil Miquela, she has like superpowers a bit because she’s a robot. Um, and she can kind of get away with that because her storyline, everyone knows that she is a robot, so she can, um, she does like different things that doesn’t match like a human, but that’s fine because that was her storyline.”

In addition, Lil Miquela's other robotic characteristics that match her robotic ideal include her frequent "upgrades". Luke also notes that it is not necessary that a VI be humanlike. In fact, fans prefer a non-human appearance that is "stylized or somewhat animated". The ideal for VIs is not a human but rather a virtual entity:

"The 'importance' of looking and behaving like a human is counter-intuitive, in that virtual humans are their own creative selves. They're not meant to be perfectly human... they're meant to be perfectly virtual."

A virtual entity ideal also sidesteps the above-stated issue surrounding the human ideal, referring to the disagreement contemplating the ideal human and whether an influencer should look perfect. As Martine elaborates:

"...it cannot have a humanoid appearance because...we wanted to get out of any discussion about how he's too big, she's too small, he's too pretty, she's too pretty, why is it a woman, why is it a man, etc."

Some consumers also mention the relevance of the right purpose and medium – as long as VIs are used for entertainment purposes and in video gaming contexts, they might be more easily accepted.

"I think they can be used as entertainment and fun as within video games. Then I think they can prove to be an additional and useful resource if used for social causes. The generations of tomorrow could probably be more subject to the "positive" influence of these virtual influencers". (Consumer 43)

"I am always in favor of using these assets for social issues. I think their effectiveness depends on the population at that point in time; today I think it's still early but in a few years it's possible that people could be influenced by digital people. It depends on how this medium is perceived by the population. For example, Chiara Ferragni years ago didn't have the same following she has today, so it's possible that thanks to the technological evolution and the generational change an avatar could reach the same success in a few years". (Consumer 7)

As for inauthentic examples, there seems to be somewhat of a limit as to how far VIs can reach their usefulness, as highlighted in the following comment:

"The activity on social networks is the same, a virtual influencer behaves in the same way as a real influencer. What is different is the fact that a real influencer can have personally appreciate the human side, which is not present in a digital influencer. So, I'd probably get bored with the narrative of a 'perfect' avatar after a while". (Consumer 13)

At the same time, many consumers mention that with more familiarity and acceptance, future generations might be more receptive to these innovative, creative opinion leaders and take them more at face value. The following quotes provide examples of both the current and future potential of VIs.

"I think that new generations are likely to face digital realities during the daily routine, and we are really attracted to whatever is new, disruptive, digital and innovative. The key to the success is surprising and catching the attention of the audience". (Consumer 12)

"I find that the company has the most to gain from saving money and publicity. From the point of view of the audience I think it's too early because peers are still anchored to real relationships; future generations or the younger Gen Z will grow up completely immersed in this dimension that no longer perceives the boundary between real and digital". (Consumer 3)

"Virtual influencers could be successful with the next generation that will approach for the first time on Instagram as if the virtual influencers were a common thing. Certainly, with our generations they will not be able to go far". (Consumer 29)

Overall, the dimension TTI Authentic Virtual Entity captured a shift away from idealized human-like characteristics towards features that emphasize the benefits and creative value of the virtual persona. Accentuating virtual attributes can also help prevent unnecessary stereotypes or criticisms, in turn making room for greater inclusivity. Future generations might be particularly open to following VIs, as these artificial fabrications are likely to become increasingly common in the digital space.

TTI Authentic Character. Many study participants acknowledged that VIs are fictitious characters, like those in television, film, or theatre. Furthermore, they also expressed that a VI can maintain authenticity as long as their actions correspond to their storyline. As such, a VI's established character is the ideal; a VI's actions that are "in character" are authentic, while those that are "out of character" are inauthentic. *Thus, TTI Authentic Character refers to the degree to which the VI's attributes correspond to its established character.*

Along these lines, Luke notes that one of the important factors of a good VI brand endorser is *"a consistent storyteller who creates a cohesive, value-adding narrative for the world"*. That is, a consistent, cohesive narrative is one that follows the character's storyline. Adrienne's notion of a VI's "bible" constitutes the VI's ideal, which creators can refer to when developing the narrative to ensure the VI's actions are consistent with the VI's storyline. Jason recognizes that, as with brands, VIs should have a brand or identity: *"I keep describing this to people as like you're creating a brand, right. There's like brand guidelines."* Quentin concurred in discussing Livi, referring to her identity or character card:

"We had to do them to ... finally make the foundations of Livi, that is to say we made her identity card, where she comes from, where she was born, etc. And then we created her background, which allowed to make the information, the founding elements of the...It's like a character

card...Yes, that's it, that's a bible, where it came from, etc., so that we can answer any question..."

Jason expounds on how VIs exhibit authenticity when they are consistent:

"...there was a very specific way how he would talk and I'm using that reference almost in the same way of how like Mia is and she uses these terms or she says, you know, it's kind of like Spanglish the way she communicates. And like, if you see that consistency, that consistency seems real. I guess once again, going back to like authenticity."

On the other hand, Gabrielle offers an example of a VI being inauthentic in this regard. She recalls that Noonouri promotes sustainability but that such activism does not fit with her fashion identity/character (created via being seen in many different fashion outfits and interacting with fashion brands). Concerning VI's promoting brands, she further suggests that as long as the promoted brand fits within the VI's storyline, it works because it is believable. Martine further explains that despite VIs' inability to sample products, they can successfully promote brands:

"Since they aren't human they won't be able to actually try products anyway. Above all else, they are here to talk about the values that the brand has".

TTI Authentic Character is essentially what gives the VI its unique personality, as captured by it's the notion of the VIs' 'bible' that differentiates one virtual entity from another, in line with the idea of 'human brands' (Parmentier et al., 2013). Like a social media influencer, a VI can be conceptualized as a brand. VIs that offer an "on-brand narrative", one consistent with their brand essence, will be considered authentic, while those that offer an "off-brand narrative", one inconsistent with their brand essence, will be considered inauthentic (Eng & Jarvis, 2020; Spiggle et al., 2012). This assessment may occur in addition to one's assessment of a VI's TTI authenticity in terms of whether it conforms to a human or a virtual entity. In a sense, TTI Human and TTI Virtual Entity both capture a higher-level 'product category' ideal – akin to champagne vs. cava. TTI Character, however, captures a lower-level 'brand essence' ideal – akin to Veuve Clicquot vs. Moët et Chandon—brands with unique brand essences both within the champagne product category. Although this notion is important for all-purpose VIs, the VI positioning might be particularly relevant here. Our participants seemed less concerned about the consistency of storylines in the case of entertainment-oriented VIs as opposed to others that captured their audience, acclaiming expertise in a certain topic, genre, or cause.

4.2 Manifestations of VI True-to-Fact Authenticity

TTF Authenticity is the most fundamental of the authenticity types when deciphering the meaning of the label “virtual” in the case of VIs. Because VIs are manmade creations with no underlying reality—at least in the tangible sense of the term—they have no fact referent. As such, VIs are not TTF authentic. Nonetheless, TTF authenticity does manifest in other ways, which include TTF Authentic Disclosure and TTF Authentic Human.

TTF Authentic Disclosure. *TTF Authentic Disclosure refers to the degree to which a VI’s creators communicate to consumers that the VI is not a real human.* Whereas the VI itself is not TTF authentic, those controlling the VI may or may not be TTF authentic in their communication about the VI’s virtual nature. For instance, in the domain of products, a seller of a counterfeit Louis Vuitton handbag (TTF inauthentic, in that the handbag is not what it appears to be) may or may not disclose that the handbag is fake.

Similarly, a creator may disclose that the VI is not real, and this disclosure can range from explicit to implicit (see Moulard et al., 2021). The case of Lil Miquela provides a great demonstration that captures the various levels of disclosure. At the time of her launch in 2016, her creators (the Brud agency) did not explicitly communicate to her followers the virtual nature of Miquela. Moreover, the Brud agency did not initially identify itself as her creator. Such absence of explicit disclosure was really puzzling for some followers:

“I initially didn’t realize Lil Miquela was an avatar, and I would compare her to a real person”.
(Consumer 6)

The explicit disclosure was made only later in 2018, when Bermuda (another VI of Brud’s creation) hacked into Miquela’s Instagram account and forced her into publicly revealing that she was a robot. Of course, this storyline was orchestrated by the creative team behind these digital personas. Following this initial revelation, an entire elaborate storyline was developed around this disclosure, including Miquela herself having to deal with the fact that, contrary to her original beliefs, she was in

fact, not human. Her “robot issues” offered the team a great opportunity to state explicitly and on a regular basis that she was not a human.

Miquela’s ‘coming out’ was concrete and direct, leaving no room for doubt. Nonetheless, disclosure strategies might be more implicit than what we observed in the Brud’s communication strategy. For instance, slight anomalies in the VI’s posts, particularly visual ones, may offer the audience hints that the VI is not real. Jason elaborates on this implicit disclosure:

“...the only thing you may see from time to time is like, through the Instagram stories and things like that, you’ll see like female hands and like, whatever, like that, sometimes there are actual hands and I think that’s what really throws people off. Cuz they see this, this image that they they’re kind of like trying to understand is this real, is this fake who is obviously there’s somebody behind this cuz then they start to see real hands.”

TTF Authentic Disclosure was considered important by several interviewees. Luke stated for a VI to be a good brand endorser, *“the top priority is that there’s a trustworthy, ethical and transparent team behind the virtual influencer”*. JianGuo explained that companies would not be perceived as trustworthy when they are not transparent:

“...if you are, as a company behind, this is a trustworthy company, then you’re most likely to work with to use this as well. But if we are, for example, Facebook that has already bad track record and they creating this virtual human...I’m not sure if you want to use it.”

Martine echoed these sentiments:

“Transparency is extremely important...the more transparent the contract is, the more legible it is, the more engaged the audience is, and the less visible it is, the less engaged the audience is to avoid being manipulated.”

Agreeing with the above quote, both Gabrielle and Adrienne stated that ethical issues would arise if consumers are not aware that a VI is not real. Such sentiments are consistent with the ERC Framework (Moulard et al., 2021), which proposes that TTF authenticity leads to one of the three trusting beliefs – integrity beliefs. Integrity beliefs “reflect the confidence that the firm adheres to a set of moral principles or professional standards that guide interactions with customers” (Schlosser et al., 2006, p. 136). While high TTF authenticity leads to higher integrity beliefs, low TTF authenticity should lead to lower integrity beliefs.

Nonetheless, Gabrielle pointed out that whether a consumer realizes an influencer is virtual depends largely on their knowledge of and familiarity with the technology. From the consumers' standpoint, more broadly, this phenomenon could trigger confusion and doubt, as described in the following quote:

"I think that the new generation runs the risk of not recognizing what is real and what is artificial, thus struggling to distinguish between the two realities. Sometimes I think that this happens to escape from reality. Instead, my generation is able to discern reality and artifice, and thus the online game, the virtual world becomes just a tool for entertainment". [...] "I fear the huge potential following these virtual influencers will have, because there will be more and more confusion about recognizing true empathy, between humans, versus feelings for something artificial that is unable to reciprocate them". (Consumer 15)

Interestingly, the more a VI is TTI Authentic Human, the more important TTF Authentic Disclosure becomes. When a VI behaves and looks like a human (TTI Human Authentic), individuals may believe it is a real human (TTF). This notion is consistent with the ERC Framework, which proposes that TTI authenticity leads to perceptions of TTF authenticity. The more a handbag has the attributes of a typical Louis Vuitton handbag (TTI), the more consumers believe it's the real thing (TTF). Jason offers an example in discussing his VI, Mia:

"I have actual like guys who think this girl is real and they wanna take her out on a date. I'm like, okay, I don't want this to be, you know, uh, catfish."

Because a human-looking VI may be perceived as a real human, explicit communication or implicit "hints" that the VI is not human might help ensure consumers understand the human-looking VI is not real. Along these lines, Luke noted:

"The more human-like a virtual influencer is, though, the more transparent and disclosing you must be in order to usher fans into your universe. People do not like to be tricked—it's human nature".

The importance of knowing who's behind the VI also reflects in consumers' discourse:

"I've always been interested in this reality, and I've wondered from the beginning what was behind these characters. Since they sponsor countless brands, I thought it could be a marketing tool". (Consumer 9)

While creator transparency seems like an obvious decision, particularly for a human-looking VI, some interviewees were hesitant to reveal who was behind the VI. Martine expressed this hesitancy despite acknowledging the importance of transparency:

"I don't know because saying who is directly behind the characters immediately, I would rather the character have a month, maybe two months, of existence, before announcing who's behind it."

Interestingly, Jason questioned whether transparency about the VI's virtual nature is always positive. Rather, his experience with Mia led him to believe that initially hiding the virtual nature of the VI could add to the VI's appeal and mystique.

"And I think some of them have found out...So Mia started doing, um, parties...at a couple venues here in Miami. And so she's kind of like the host or the promoter of the party. And these girls, when we first did it, like, were showing up, like, where's Mia. Like they wanted to like meet her. And...it was kind of, like, whoa, like, this is crazy, you know? Like, and then they got like on the, on the visuals, in the space where, like, you know, a virtual face looking around the room. So, like, they got the vibe, but I think they started to engage more just based on the fact that it's like, wow, there's this girl. Who's not real, but like talking about the things that I want to talk about, she's doing the things I wanna do. So they start to, it's almost like that's pure influence. Right. That's like the real influencer."

This is an interesting phenomenon that seems analogous to parents perpetuating Santa Claus until their child discovers the truth. Some children may suffer emotionally from being duped for years. Yet, given this custom has continued, one could argue that Santa offers more benefit than harm. Similarly, this *Santa Claus Effect* may apply to VIs: concealing a VI's virtual status may offer unanticipated emotional value—fun, amusement, wonder, and curiosity. Nonetheless, Jason's hesitancy to reveal Mia's virtual likeness may also be driven by the potential disappointment of Mia's followers:

"I guess I haven't found the right moment to, to do it [disclose], you know, like I I'm I'm one year into this as of like this last month. And um, I think just creating this conversation of like, I still have girls that like will message Mia in almost like in this way of like what, like, like they are following it as if it's like somebody they actually care about, you know what I mean? ...some of these girls are like, when can we hang out? ...When can we meet and when can we...I find them even encouraging Mia."

In summary, TTF Authentic Disclosure entails how forthcoming a VI's creator(s) are in communicating to the audience that the VI is not real. Such communication may involve explicit statements or implicit cues. Most interviewees were adamant that such transparency is vital to the VI's success. This transparency was thought to be most important when the VI was highly humanlike (TTI Authentic Human). In such cases, followers may come to believe the VI is a real person (TTF) and will feel manipulated once they realize the VI is not real. Nonetheless, one interviewee questioned whether transparency is always advantageous. Initially hiding the VI's virtual nature and allowing followers to

gradually discover that information may increase the VI's mystique and overall appeal—labeled herein as the *“Santa Claus Effect”*.

TTF Authentic Virtuality. Within the ERC Framework, all information online becomes TTF inauthentic in that it is a digital representation of the physical world. Nonetheless, some digital representations are unadulterated, such as an unfiltered digital photograph or the raw audio/video of a human. On the other hand, other digital representations may be completely computer generated in between lies filtered or digitally augmented images, videos, and audio. Further, AI may produce a digital human representation using an aggregate of thousands (or millions) of inputs of actual human faces, which would not be 100 per cent computer fabricated given it is based on actual humans. This range of undoctored images to fully fabricated digital representations applies to VIs as well.

While undoctored images are typically considered more authentic, in a VI context, one could argue that a completely virtual representation is the ideal since these influencers are labeled virtual. One may ask, “Is this VI presented to me actually virtual?” Thus, *TTF Authentic Virtuality refers to the degree to which the VI’s digital likeness is computed-generated.*

Creators expressed that VIs that are completely computer generated are the pinnacle of VI creation. Quentin explained the VI he worked on was fully computer generated:

“...we finally found this character. And then we transformed it, had it 3D-modeled with a technical service provider.”

Jason expressed his pride concerning not using a human model in the creation of his VI, Mia: *“the one thing that I'm doing differently is that she is fully 3D, that there is no, there is no stand in model.”*

While some VIs are entirely digitally fabricated, most VIs rely on human models, which was seen as subpar. JianGuo explained the current state of VIs:

“So virtual influencer is mostly live in the space of Instagram so far, and usually what you see, 99% is, is a real person and having the face replaced by a synthetic form. And that's usually Photoshopping... but what rarely...you see is basically an influencer that's completely CGI, like full body.”

Quentin concurred, stating, *“but look, like, this is basically a picture here and now they've just changed his head.”*

Users are aware of the various creative possibilities offered to VI developers, which are perceived as different approaches:

“It is one thing to put filters on a real person, it is another thing to create a character that you know is fictitious. So, you know that a modification has not been made on a real person but that what has been created is all fantasy”. (Consumer 26)

In summary, when an influencer is a human, an unaltered digital representation would be considered TTF authentic. On the other hand, when an influencer claims to be virtual, a 100 per cent computer-generated representation is considered TTF authentic. Creators were especially critical of VIs that relied on human models. While not emerging from the data, such perceptions likely depend on the creator’s TTF Disclosure. That is, when creators explicitly disclose that the VI is virtual, consumers may form expectations of a virtual ideal. Thus, they may expect a completely computer-generated VI and may contend that the incorporation of a human model results in an inauthentic VI.

4.3 Manifestations of True-to-Self Authenticity

Because VIs are manmade constructs with no underlying reality, they also have no self-referent and, consequently, are not TTS authentic either. Nonetheless, and like TTF authenticity, the data suggest TTS authenticity does manifest in other ways, namely as TTS Authentic Motivation and TTS Authentic Autonomy.

TTS Authentic Motivation. Despite that a VI has no actual self, TTS authenticity is still applicable to the VI context since the creator(s) does have an actual self and, therefore, intrinsic and extrinsic motivations. Thus, *TTS Authentic Motivation refers to the degree to which the VI’s creator(s) is intrinsically motivated to design and sustain the VI rather than extrinsically motivated to do so.*

As noted, many interviewees referred to the VI as a fictitious character, similar to those in television, film, and theatre. Developing VIs, then, is a highly creative process. With that in mind, VI creators can be considered artists, and TTS Authentic Motivation is analogous to an artist’s authenticity (Moulard et al., 2014). Authentic artists work on a project that provides joy—those close to their heart—and do so for their own fulfillment (e.g., intrinsically motivated). Inauthentic artists, on the other hand,

create art that they believe will be well received (e.g., extrinsically motivated). Further, even though the creator of the VI is intrinsically motivated, it is possible that people will refer to the VI as TTS authentic or inauthentic, particularly if the creator(s) is not identified or evident. A similar phenomenon exists with brands. When consumers complain about a brand selling out or going too commercial, they are not referring to the inanimate brand; they are referring to those controlling the brand—the owner(s) or management team (Moulard et al., 2021).

Interviewees routinely mentioned these themes. Concerning being intrinsically motivated, several interviewees commented on the VI creator's passion. In discussing collaborations with partners on a VI, Grégory explained, *"So it could be complicated, but it's, uh, it's a passionate, passionate..."* Gabrielle emphasized that passion contributes to the VI's success, stating: *"I think just...having like the passion and interest in it, um, is super key."* Jason repeatedly referred to his VI, Mia, as his "passion project" and expressed his gratification with the creative process:

"It's definitely a passion project right now...I just thought it was like, WOW, like it was just such a WOW moment for me to be able to create things that aren't real, that look real...it's something that I find enjoyable...it's, it's a passion project, you know? So...I'll, you know, stay up all night working on this, you know what I mean? Just kind of for the, yeah. The love of it, you know?"

Alternately, some interviewees noted creators or brands (if developing a VI spokes-character) whose decisions were based on extrinsic motivation, namely profits. Martine notes:

"I know a lot of people that come and consult me to work on the concept of the metaverse and virtual influence, to quickly create characters or avatars, to be able to immediately start making money off of something. My objective is not this at all."

Gabrielle also referenced the potential for profit orientation by creators and brands:

"I mean, I think it's important to be very authentic in this space, I think, cause they talk to like gen Z and millennials and I think you can also see very clear if they're just trying to make a lot of money out of something."

A few discussed that following trends and what is popular is linked to inauthenticity. Referring to a VI that recently began posting about sustainability issues, Gabrielle explained:

"...it doesn't feel authentic to me. It just feel a bit like all over the place and just like whatever is popular to like talk about..."

Likewise, Luke explained the appeal of VIs to agencies and brands: “they want to be innovative...they don't want to miss out on emerging trends.”

On the hand, resisting trends and not caving into consumer demand is necessary to follow one's own commitment and passions. As Martine states:

“...we can't tell a young person to not be on social media, it's dumb. But maybe what we can do is produce some content which is a bit less like soup. There are some brands that tell me well young people want soup so we should serve them soup. But I think that we should also awaken our consciences.”

Jason concurs:

“I'm trying not to let the engagement dictate exactly what I do still kind of stay on the straight and narrow path until I kind of get to a certain goal, you know? Okay. Cause yeah, I think there's an easy sell out way to do this...”

Further Jason contends that his VI, Mia, should also create her own unique path rather than follow the crowd:

“...and having a real opinion, not just like, uh, oh, this was great. You know what I mean? Actually like, saying she doesn't like things that are popular opinion. I think that's what really creates dialogue. Right. Not, not following what everybody else is saying, but really kind of like going against the grain.”

Such interviewee remarks are consistent with the ERC Framework (Moulard et al., 2021), which proposes that unconventional, rare behaviors lead to perceptions of TTS Authenticity. Such non-conforming behaviors involve social risks and costs (Kelley, 1987). Thus, “going against the grain' is difficult, and people are less likely to engage in such behavior unless they truly feel motivated to do so” (Moulard et al., 2016, p. 424).

Consumers also pay attention to the motivation of the team behind a VI:

“VIs don't have an appeal on me because they are products packaged ad hoc for a marketing action on behalf of some brand”. (Consumer 22)

Thus, similar to human influencers, the team behind a *virtual free agent* is expected to select partnerships congruent with their brand's positioning; otherwise, they might jeopardize their credibility and run the risk of being perceived to be extrinsically driven:

“Chiara Ferragni is credible if she works and sponsors fashion brands because that is her field of interest. Lil Miquela being an avatar gives me more confidence when she talks about technology.

So, for the same reason when Lil Miquela sponsors something outside from the technological field I find that it is only a marketing strategy". (Consumer 6)

More precisely, consumers highlighted domains for which VIs could be relevant and others for which they could be perceived as selling out, in turn questioning their underlying motivations:

"I find the figure of an avatar as a brand ambassador for a technology product could be consistent. On the other hand, when it comes to a service or product for which post-purchase feedback is required, I think the presence of the avatar may have its limits". (Consumer 6)

These interviewee observations align with the ERC Framework, which proposes that TTS Authenticity guides perceptions of TTS Authenticity (Moulard et al., 2021). Being consistent or stable over time increases perceptions of intrinsic motivation. Such steadfast behavior suggests that one has a strong commitment to their calling (intrinsic motivation), whereas waffling behavior is indicative of catering to the hottest trends in the market (extrinsic motivation)(Moulard et al., 2016). Overall, TTS Authentic Motivation comprises of the VI creator being passionate about the creative process in developing the VI (intrinsic motivation). Producing VIs only for monetary gain (extrinsic motivation) was considered undesirable both by experts and consumers. Likewise, resisting the latest trends and showing consistency emerged as related to being intrinsically motivated, consistent with ideas proposed by the ERC Framework (Moulard et al., 2021).

TTS Authentic Autonomy. Data from the interviews revealed differences regarding the creator or "who" controlled the VI. The controlling agent ranged from one person to a team of people to AI. Evidence revealed these differences in the controlling agent are tied to TTS Authenticity. That is, the greater number of individuals involved, the less autonomous the controlling agent becomes. *TTS Authentic Autonomy refers to the degree to which the virtual influencer is controlled by a single individual with human agency.*

This range of control emerged repeatedly from the data. In one case, the VI was controlled by one individual. Jason proclaimed, *"I felt like I should understand the complete process...so currently [only] I am doing it."* However, most VIs discussed were controlled by a team. In discussing LVHM's Livi, Quentin explained:

"...it was a very rich team effort...we recruited a team of tech journalists, who worked on all the topics, the themes, to prepare the interviews, to prepare the speeches....that's our whole team, the SPOA team, there's a team behind Livi to actually bring it to life".

Martine also discussed the team effort, which she contrasted with human influencers:

"Yes, but unlike with influencers, the humans involved in this scenario are at least big teams, it's at least ... a dozen or fifteen people minimum, so it's a product of joint intelligence...but the point is that it will not depend on only one person."

Lastly, joint intelligence is maximized via AI. Gabrielle suggests the likelihood of an AI-controlled VI:

"I think there's, you know, at one point...when AI is gonna kind of take more over in a sense, I mean this is like in a many years, but that will kind of be when you would have to clarify if, if you're interacting with a human or a, or, or a robot..."

Such feelings were corroborated by consumers interviews:

"I wondered how a virtual influencer, controlled by artificial intelligence, could reach so many followers. I can't think of them as authentic and independent characters but rather as characters controlled by third parties". (Consumer 8)

Overall, the evidence suggests that the control agent may be tied to authenticity. Karla's description of her son reacting to her questions about who is behind the VI reveals the following:

"...a virtual created avatar, running you through the programs, would you like that? And he said, 'yes, but only if I knew it's a real person behind it, like, I do not want it to be a company'...he doesn't want it to be 10 people programming this thing."

His negative reaction suggests the VI is less real when more than one person controls it. As more humans control a VI, these individual, autonomous motivations become diluted and heterogeneous and, thus, become less "real". Such dilution and heterogeneity may be increased due to team turnover. Consumers raised concerns about the stability of VI teams and how their lack may lead to reduced trust, perhaps due to perceptions of misplaced motivations.

"Being that there are a bunch of people behind it, it is also absurd to think of an answer because I could never trust the people behind it. One day you might be talking to one person and the next day to another." (Consumer 24)

These reflections are interesting as they demonstrate that consumers are not necessarily comfortable with the idea of a team behind a VI. Those participants who are frequent gamers are used to dealing with avatars, but they always know that there is 'a real person' behind them. In their perception, this is not always the case for VIs, which creates a sense of unease.

Diluted and dispersed motivations may also explain how VIs run by large teams are better able to escape criticisms than are human influencers (often operating independently):

“They are also unable to feel attacked, while human influencers can be attacked, become fragile, by different people. In this scenario, there are multiple people involved, so they feel less vulnerable.” (Martine)

Lastly, one could argue that while intrinsic motivations may be diverse among individuals, extrinsic motivations, particularly economic rewards, have a universal appeal among individuals. As such, extrinsic motivation may be the dominating force within a group setting. This notion was suggested by the consumer interviewees. For them, picturing the team behind the VI made the commercial motivations even more obvious:

“I think [VIs] are very similar to real influencers. I imagine that a classic influencer has a manager behind her who produces the image to be published on social networks. A digital influencer has a pool of technicians behind him who determine contracts with brands and construct the posts to be published on social networks. So, I don't see many differences between these two realities. In the end, an influencer is always "driven" by contracts with external brands that direct the image that a given profile must have in front of the audience”. (Consumer 10)

To summarize, TTS Authentic Autonomy relates to the VI's control agent, which may vary in the number of individuals involved in the VI's creation and maintenance. Control of the VI may range from one person to AI (an aggregate of human input), with a team of individuals in the middle of this continuum. Importantly, some evidence revealed that this range is related to TTS authenticity. The fewer individuals involved (i.e., one person) were seen as most authentic. This perception is likely due to the fact that one individual might be perceived as more autonomous, and intrinsic motivation might also be easier to ascribe to one single person. As such, TTS Authentic Motivation is likely dependent on TTS Authentic Autonomy.

5. DISCUSSION AND CONCLUSION

The aim of this research was to understand how VIs, who are not real entities – in the sense that they have no underlying human reality – could be viewed as authentic in the first place and, if so, how authenticity manifests itself. Indeed, the rising interest in VIs is somewhat surprising and counter-intuitive, given authenticity's significance for consumers regarding products, brands, and especially

human influencers. To answer this question, we apply the Entity-Referent Correspondence (ERC) Framework proposed by Moulard et al. (2021) to VIs. In doing so, we identify multiple meanings associated with each general authenticity type that emerged in this context of artificial computer-generated personas.

The existing literature identified three main types of authenticity in the context of brands: TTI, TTF, and TTS (Moulard et al., 2021). Within the context of VIs, our findings suggest VIs can be TTI authentic even though they are not “real”. The VI itself, however, cannot be TTF or TTS authentic. Nonetheless, TTF and TTS authenticity do manifest in a VI context since other elements associated with the VI may be assessed, particularly the VIs’ creators. The theoretical contributions section offers a discussion of these findings in relation to previous research.

5.1 Theoretical contributions

From a general perspective, this research contributes to the authenticity literature in a VI context, in turn shedding new light on the uncanny valley theory (Mori, 1970; Mori, 2012).

Contributions to the VI Authenticity Literature. Through revealing the multiple manifestations of the ERC authenticity types as they apply to VIs, our study extends the recent limited literature on VI’s authenticity that thus far failed to recognize its underlying complexity (Antonio Batista da Silva & Paula, 2021; Block & Lovegrove, 2021; Lou et al., 2022).

Building on the ERC framework (Moulard et al., 2021), TTF authenticity can be viewed as the fundamental authenticity type in understanding the use of the adjective ‘virtual’ in labeling these virtual entities. Because VIs are manmade creations with no underlying physical human reality, they have no fact referent. As such, VIs are TTF *inauthentic* – not real. Nonetheless, VI’s TTF authenticity is manifested in the form of authentic disclosure and authentic virtuality. Concerning TTF authentic disclosure, when VI creators are transparent in disclosing that VIs are not real humans, they are seen as more authentic. Such disclosure is particularly important when VIs appear human-like (i.e., highly TTI human authentic). Our results reveal that a human-looking VI may lead followers to perceive the VI as an actual human.

Failing to disclose the VI's virtual nature may cause confusion and perceptions of being manipulated, leading to decreased trust. This finding is consistent with the ERC Framework (Moulard et al., 2021), which proposes that low TTF leads to decreased integrity beliefs, a type of trusting belief.

Going even further from such a restrictive TTF conception of authenticity, this research enriches our understanding of human reactions to virtual entities through the idea that TTI authenticity might be at stake in the VI context. Indeed, VIs are social constructs – or ideals. As such, a VI *can* be *TTI authentic* if their characteristics match the VI ideal referent – expectations of what the VI should be. Thus, subjectivity can play an important role in attributing TTI authenticity, as different individuals may have different ideals, which is in line with the ERC Framework (e.g., Moulard et al., 2021). Our findings show three manifestations of this form of authenticity: TTI authentic human, TTI authentic virtual entity and TTI authentic character.

In terms of *TTI authentic humans*, our results reveal that VIs are more successful when – above and beyond their human-like appearance – they also display humanlike behaviors, such as creativity and emotions when interacting with others, along with some flaws, particularly regarding their appearance. Interestingly, societal commentators have also rejected these perfect-looking VIs, criticizing pioneering creators for promoting unattainable attractiveness. With respect to *TTI authentic virtual entity*, VIs are not expected to display humanlike characteristics to be considered authentic, as they can have attributes that correspond to a non-human virtual ideal. Of note, as an ideal might change over time (Brown et al., 2003; Wang, 1999), it is possible that VI's TTI will change over time as well. With more advanced technologies and greater consumer exposure to immersive virtual experiences, the referent behind TTI authentic virtual entity is expected to evolve. Consequently, given its dynamic nature, this form of authenticity might present a greater value for the next generation of consumers. Concerning *TTI authentic character*, while previous research concentrated on VIs being innovative (Cheung & Leung, 2021), our findings show that they are seen as more authentic when they remain within the storyline of their character.

As for the final authenticity dimension, although VIs themselves cannot represent TTS authenticity as they are artificial fabrications with no underlying physical, human reality, TTS authenticity was found to manifest in the specific VI context in two distinct ways: namely *TTS Authentic Motivation* and *TTS Authentic Autonomy*. In terms of *TTS Authentic Motivation*, interesting trends emerged in our data emphasizing the importance of passion and enthusiasm on behalf of the creators concerning VI technology and character development. In contrast, creators focused on chasing trends and profits were frowned upon. Results further suggest that a VI's adherence to their 'bible' or character card (TTI Authentic Character) may affect followers' assessment of the creator's enthusiasm (TTS Authentic Motivation), in line with the ERC Framework (Moulard et al., 2021). Inconsistency with the VI's storyline, including drifting from their purpose or genre, led to beliefs of over-commercialization.

Previous research suggests that in post-modern consumer culture, social media practices involve a work of curation (Banet-Weiser, 2012). From this perspective, if Lil Miquela could be perceived as authentic within her own digital context in which spontaneity has disappeared (Block & Lovegrove, 2021) and was replaced by a sort of 'staged' authenticity (Leaver et al., 2020), it is only because the motivations attributed to her creators are perceived as being intrinsically driven.

For *TTS Authentic Autonomy*, our findings reveal that the greater the number of individuals involved on the team behind the VI, the less autonomous, and thus authentic, the VI appears. The most extreme case of this would be an AI-controlled VI, since AI represents an aggregate of human input. This result is consistent with AI research regarding the authenticity of AI-generated music. Some suggest such music is inauthentic due to its lack of intentional autonomy—an authorial voice (Colton et al., 2020, p. 344). Thus, TTS Authentic Autonomy offers an extension to the ERC Framework (Moulard et al., 2021), as contexts potentially using AI were not considered. Thus, although previous studies emphasize the full control behind VIs as a key advantage for brands in representing low-risk influencers (Drenten & Brooks, 2020), such attributes might also jeopardize and ultimately reduce the VIs' authenticity.

Contributions to Uncanny Valley Theory. As discussed, uncanny valley theory is one of the most prominent theories applied to the study of human reactions to human-like entities. The theory suggests

that reactions to humanlike entities abruptly shift from empathy to revulsion as it approaches, but fails to attain, a lifelike appearance (Mori, 1970; Mori, 2012). However, since the seminal work of Mori (1970), the context has changed dramatically, with stunning developments in the domains of robotics and digital technologies. In our current digital era, we might need to re-consider theoretical frameworks that rely heavily on traditional and tangible properties of physical objects and develop new conceptualizations that work well in an increasingly virtual context (Koles & Nagy, 2021). This, in turn, might shift user responses as well as the types of entities that might be considered for the uncanny valley. Indeed, one of the assumptions of the uncanny valley theory is that human is the only possible ideal referent for a non-human entity, building on the work of Mori (1970), who analyzed the extent of human comfort in reaction to entities representing varying degrees of human likeness. Our findings suggest that two alternative ideals may be at play: virtual entities and characters. We reexamine the uncanny valley hypotheses in light of these three competing ideals.

First, since human-like VIs likely elicit a human TTI ideal, consumers form expectations that the VI is human. If the VI's appearance becomes too human-like and in some cases, too perfect, consumers initially question whether the VI is real, resulting in confusion and doubt. Such beliefs and feelings are consistent with the notion of 'intellectual uncertainty' used to describe 'uncanny' (Freud, 2004). However, contrary to the uncanny valley hypothesis, negative reactions to very human-looking VIs may not be due to fear. Instead, rejection may be due to these VIs looking too perfect, thus projecting low TTI authenticity since the VI does not fit with the expected imperfect human. As a preliminary support for this contemplation, according to Lou et al. (2022), curated flaws of the VI appearance could facilitate the acceptance of the VI and reduce feelings of eeriness.

Second, and importantly, research focusing on the uncanny valley does not consider individuals' additional negative reactions to the realization that a presumably human-looking VI is not real. Specifically, the uncanny valley theory does not consider consumers' assessment of the agent in control of the VI. That is, it does not consider TTF inauthentic disclosures. Upon realizing that the human-looking VI is not real, consumers might become upset that the virtual status of the VI was not communicated.

Prior research using the uncanny valley theory to study VIs does consider disclosures, showing that communicating the human-like VI as virtual results in a more favorable assessment of the VI (Franke et al., 2022; Lou et al., 2022; Mirowska & Arsenyan, 2023). However, such disclosures may simply allow consumers to form a TTI virtual entity ideal rather than a TTI human ideal.

TTI authentic virtual entity identifies a counter-intuitive ideal of the VI persona, contradicting Mori's assumption that human is the ultimate ideal. In the VI context, our findings suggest that attributes that correspond to a non-human virtual ideal may be expected for some VIs and for some consumers. Thus, instead of being perceived as strange, adopting behaviors which transcend human possibility, such as teleporting themselves or disappearing, could be an expectation of users, when the virtual entity is the ideal.

Finally, the identification of *TTI authentic character* as a source of authenticity confirms the uncanny valley theory in the context of VIs. Indeed, while Mori (1970; 2012) highlighted that human-like puppets could elicit a high level of affinity due to their entertaining properties, our findings show that in a VI context, developing rich character storylines is a good way to avoid potential rejection risks.

In conclusion, one possible idea to explore might be that instead of a 'valley' of negative reactions to those VIs that look too human-like, there might be a positive linear relationship between user reactions and different forms of ideals: human, virtual entity, and character. However, the importance attached to each ideal may vary from person to person. A closer look at the performance of Lil Miquela, one of the most successful VIs, suggests that for human-like VIs, the human ideal and the virtual ideal are the most important. Similarly, Kami, the Down Syndrome VI, is also very human ideal oriented in the sense that her appearance is based on human faces of young women living with Down Syndrome; but she is also very virtual ideal oriented in the sense that she is a conglomerate entity, overtly fabricated by AI. It could be argued that Shudu Gram is more human than virtual ideal oriented. Her creators clearly intended to develop a human-looking person, as her virtual dimension might not be obvious to a non-expert consumer. Moreover, this virtual dimension is not explicitly used in her storylines. On the contrary, Livi, the LVMH spokesperson representing innovation, is more focused on

her virtual dimension than her human one. Since her first appearance, she talks about her long development process, assuming that there is a team behind her. Although she looks human, her robotic movements and speech seem intentional. Figure 2 provides a visual representation of human-like VIs in terms of their degree of correspondence to the human and virtual ideal.

Figure 2 should go around here.

5.2 Managerial Implications

In addition to the theoretical contributions, this research has practical implications for brands and industry practitioners. First and foremost, it is important for VI creators to decide whether their VIs should be human or non-humanlike. Our findings demonstrate that although virtual, VI-perceived authenticity could rely on their ability to stick with one of the VI ideals: the human, the virtual entity, or the character. Thus, VI creators need to identify the social construct (i.e., ideal) envisioned by their targeted community so that the VI can be developed and managed accordingly.

If a human is an ideal referent, some possible ways to make VIs look and feel humanlike include communicating like a human, embracing human speech, showing human emotions, showing depth like normal humans, and interacting with other humans, i.e., through social media platforms. While the integration of advanced cutting-edge technologies offers the possibility of making VIs look almost perfect in terms of beauty, body size, and facial expressions, VIs creators and brands should possibly embrace VI design to show imperfections, which is often the case with human influencers. As a further point on their appearance, human-like VIs should embrace cultural and ethnic diversity, which is likely to positively impact consumers' perceptions of the VIs' authenticity as they will more closely resemble the real world and communicate greater inclusivity. We recommend creators to continue experimenting with new developmental processes. For instance, conglomerate VIs made from composites of a high number of real human images offer interesting avenues to develop realistic, flawed and inclusive VIs, which better fit the imperfect human ideal. Indeed, the success of conglomerate VIs such as Livi or Kami corroborates the idea that people prefer average faces crafted from composites of pictures (Langlois & Roggman, 1990).

If the character is the ideal referent, creative and high-quality storylines that are not only following global trends and fads but rather are unique have been emphasized as meaningful and recommended. Similar to other domains of production, such as cinema or TV shows, we recommend creators develop a “character bible,” which describes all the biographical features of the VIs, their childhood, their motivations, their fears, and pain points. This is a particularly important notion, considering that many VIs are managed by an agency or teams of experts whose composition may change over time.

Going further, a VI’s ‘character dimension’ is likely their most valuable feature. Indeed, while product placement offers brands interesting ways to promote their goods through fictional narratives developed outside of the brand consideration, VIs are characters developed for the purpose of influence. Certainly, an opportunity exists for brands to benefit from VIs’ stories, developed to fit the brands’ commercial objectives. Yet brands must recognize that their own virtual spokes characters will be competing against virtual free agents for consumers’ attention. Indeed, it may be challenging for a brand to engage followers with their business activities and renew the storylines daily. In that respect, the digital agencies and freelancers that create virtual free agents may have more flexibility to create vivid and engaging characters. Creating content that is congruent with the VI’s purpose and positioning is also fundamental. This is somewhat more obvious in the case of virtual spokes-characters that are created by brands, where the VI is created with a purpose of representing the brand’s values, missions or specific projects and innovative initiatives. Virtual free agents, which are able to partner with any brand, should pursue partnerships that are congruent with their personas and expertise for optimal effectiveness.

If the virtual entity is the ideal referent, we encourage VI creators to play with the virtual nature of the VI. One way to do that revolves around how VI developers disclose to consumers or followers of VIs on social media that these VIs are not actual humans. If VI developers decide not to reveal that these VIs are not real humans, we suggest that they ensure that these VIs do not look nor act like humans. In this sense, assuming the virtual ideal with the development of “superpowers” (e.g., Lil Miquela does not

age) appears especially relevant. Of note, the disclosure also applies to the managing entity behind the VI. Consumers must be informed of who is behind the VI, who they are working for (in the case of virtual free agents) and what their commercial objectives might be (in the case of spokes characters). Although transparency and full disclosure were widely emphasized to reveal the true virtual nature of VIs, there was an interesting caveat that we refer to as the ‘Santa Claus Effect’, suggesting that some suspicion and mystique might be advantageous in offering emotional value to consumers. VI development teams should contemplate this notion of partial disclosure carefully to ensure that they do not cause harm, act in an ethical fashion, and do not ‘trick’ consumers. A good way to circumvent this is by developing high-quality, consistent, creative and innovative storylines.

Finally, because TTS authenticity manifests in the attribution of creators’ motivations (intrinsic vs extrinsic), we recommend they embrace the issue of disclosure to find innovative ways to communicate and be transparent about their intentions. Consumers want to know everything about the lives of movie directors or book writers, their creative process, their inspirations, and the causes they wish to defend. Likewise, consumers will likely appreciate VIs creators that communicate this information.

5.3 Limitations and Future Research

While this research offers theoretical contributions and practical implications, it also has limitations which can be addressed in future research. First, data was collected from industry representatives and social media users. Future studies can collect data from leading brands that have gone through the experience of creating campaigns with VIs and share best practices and areas of improvement. Another limitation of the data collection is related to the culture of the user sample, capturing only Italian participants. However, culture might have an impact on users’ VI perception. For instance, Asian cultures tend to be more familiar with VIs (Franke et al., 2022). As authenticity is related to the perception of what is considered real or fake, we could expect that in a culture where VIs are more common, the degree of perceived authenticity might also be higher. Therefore, future research could explore whether specific manifestations of authenticity appear in different cultural contexts.

Second, our research focused on three main types of authenticity—TTF, TTS and TTI—and their manifestations. Considering the continuous and dynamic evolution of enhanced technologies and consumers’ familiarity with them, future studies can explore other emerging manifestations of the three authenticity types. Third, our research focused on one of the key areas related to the successful deployment of VIs: authenticity. Future studies can focus on other areas that can enable more specific recommendations for authenticity as technological solutions become more advanced. Fourth, several theoretical frameworks have been proposed to understand the relationships formed between human influencers and their community, with the most dominant ones including social influence theory (Tafesse & Wood, 2021), the theory of parasocial interactions (Jin & Muqaddam, 2019), and the pseudo interpersonal relationship theory (Aw & Labrecque, 2020; Jin & Ryu, 2020). Although no prior work applied these frameworks to VIs, contemplating the relationship VIs form with their audience might be a particularly lucrative domain for researchers, practitioners, and brands to consider. Fifth, future studies might conduct quantitative studies to confirm our findings with additional work needed that pursue scale validation, experimental, and survey-based studies. These studies can also compare the behavior of different groups in their samples, for example, based on age and gender.

Finally, there are other additional promising areas for future studies to explore. During our research, we identified that the terminology used for VIs remains unclear. For example, some participants referred to “virtual robots” while others referred to “avatars” or “virtual characters”. Further research can develop the terminology for the VI landscape. Further, research could also discuss VIs from a technology perspective, such as the following: deep fake technologies and the propagation of fake news; the adoption of machine learning and AI for VIs to create content; and ways in which VIs might shape the world of social media. From a social perspective, future research should explore how VIs influence young consumers’ perceptions, such as Generation Z, focusing on topics such as well-being, privacy, and societal and sustainability issues. Finally, we encourage scholars to collaborate on interdisciplinary research to explore the effects of the integration of the various technologies involved in VIs on brands, creators, and consumers.

Figure 1.
Applying the ERC Framework of Authenticity to a Virtual Influencer Context

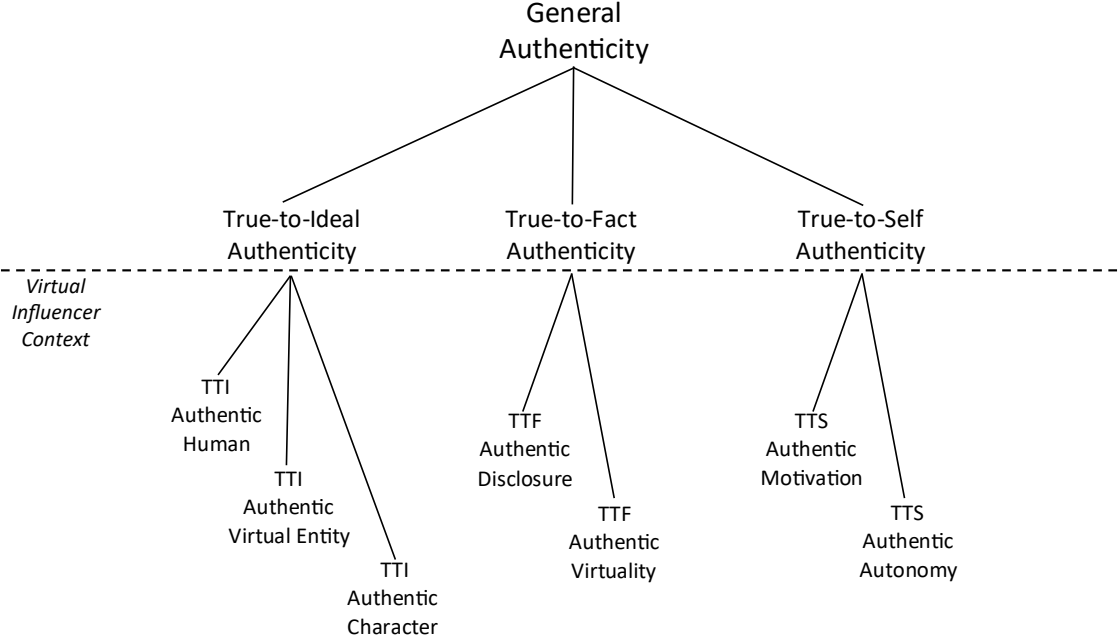


Figure 2.
Virtual and human ideal orientation for human-like VI.

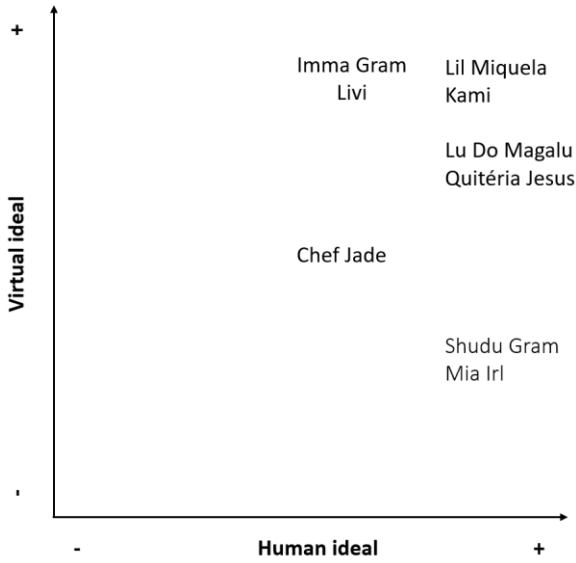


Table 1.
A review of empirical studies focusing on virtual influencers.

Research focus	Themes & Variables	References
Virtual Influencer		
<i>Comparative approach</i>	Comparison with human influencer	Deng and Jiang (2023); Mirowska and Arsenyan (2023); Ozdemir et al. (2023); Franke et al. (2022); Sands, Campbell, et al. (2022); Stein et al. (2022); Arsenyan and Mirowska (2021); Thomas and Fowler (2021)
	Human-like versus animated VIs	Mirowska and Arsenyan (2023); Xie-Carson et al. (2023)
<i>Personal attributes</i>	Authenticity	Um (2023); Lou et al. (2022); Antonio Batista da Silva and Paula (2021); Block and Lovegrove (2021)
	Human likeness	Um (2023); Arsenyan and Mirowska (2021); Block and Lovegrove (2021)
	Attractiveness	Kim and Park (2023); Antonio Batista da Silva and Paula (2021)
	Identity	Mrad et al. (2022)
	Credibility and communication style	Ozdemir et al. (2023)
<i>Relational attributes</i>	Parasocial interactions	Um (2023); Stein et al. (2022)
	Transgressions	Thomas and Fowler (2021)
Consumer		
<i>Self-driven</i>	Empathy	Mirowska and Arsenyan (2023)
	Appearance anxiety	Deng and Jiang (2023)
	Need for uniqueness	Sands, Campbell, et al. (2022)
<i>Influencer-driven</i>	Engagement	Audrezet and Koles (2023); Xie-Carson et al. (2023); Lou et al. (2022)
	Brand attitude	Ozdemir et al. (2023)
	Purchase intention	Kim and Park (2023)
Brand		
	Brand strategy	Audrezet and Koles (2023); Moustakas et al. (2020)
	Brand endorsement	Eunjin et al. (2023)
	Advertising effectiveness	Um (2023); Franke et al. (2022)
	Marketing communications	Antonio Batista da Silva and Paula (2021)

Table 2.
Virtual Influencers
Profile details, typological categorization, and examples for brand collaborations.

Name of virtual influencer (ID)	#of followers*	Appearance	Control	History & Evolution	Positioning & Orientation	Examples for collaboration / participation in projects
B. (@bee_nfluencer)	255 K	Cartoon	Virtual spokesperson (for <i>Fondation de France</i>)	Born VI	Cause (bees' protection)	Carrefour (bee protection message on their Sandbox land)
Barbie (@Barbie)	14 M	Human-like	Virtual spokesperson (for <i>Mattel</i>)	Evolved from Barbie doll	Entertainment	None
CB da Casas Bahia (@casasbahia)	6,5 M	Human-like	Virtual spokesperson (for <i>Casas Bahia</i> , Brazilian retailer)	Evolved from Bahianinho (retailer brand mascot)	Expertise (games, sustainability, youth, Brazilian culture)	Samsung, Nintendo, Brastemp
Chef Jade (@chefjadesjourney)	18 K	Human-like	Virtual free agent (by <i>Jade and Zelda LLC</i>)	Born VI	Expertise (Cooking & travel)	Taqueruia Los Cocuyos (restaurant), Unicef
Hatsune Miku (@cfm_miku_official)	6 M	Cartoon	Virtual free agent (by <i>Crypton Future Media</i>)	Evolved from a Vtuber singer	Expertise (songs & music)	Lady Gaga's world tour in 2014, Nissin Foods Spicy packet noodles
Imma (@imma.gram)	1,5 M	Human	Virtual free agent (by <i>Aww Inc.</i>)	Born VI	Entertainment with focus on fashion and arts	Dior, Ikea, Nike, Amazon, Valentino, Lenovo
Kami (@itskamisworld)	3K	Human	Virtual spokesperson (for <i>Down Syndrome International</i>)	Born VI	Cause (greater inclusion in the digital world)	Studio Acci (digital fashion)
Kizuna AI (@a.i.channel_official)	5,8 M	Cartoon	Virtual free agent (by <i>Kizuna AI Inc.</i>)	Born Vtuber	Expertise (gaming, AI, Japanese culture)	Asobimo's Avabel Online video game, "Come to Japan" Japanese office tourism campaign
Lil Miquela (@lilmiquela)	8 M	Human	Virtual free agent (by <i>Brud Agency</i>)	Born VI	Entertainment and expertise (lifestyle and singing)	Prada, Calvin Klein, Samsung

Livi	Only appears on LVMH account	Human	Virtual spokesperson (for <i>LVMH</i>)	Born VI	Expertise (innovation & technology)	None
Lu do Magalu (@magazineluiza)	30 M	Human	Virtual spokesperson (for <i>Magazine Luiza</i> , Brazilian e-retailer)	Evolved from a virtual mascot of Magazine Louisa	Expertise (digital retailing specialist)	Samsung, Roda Gigante (amusement park), Tamagotchi, Oreo
Mia Irl (@Mia)	31K	Human	Virtual free agent (by <i>Jason</i>)	Born VI	Entertainment and expertise (lifestyle and arts)	Lacoste, Agata Panucci (digital sneakers designer), SurfStyle (fashion brand)
Nobody sausage (@nobodysausage)	26 M	Cartoon	Virtual free agent (by <i>Kaël Cabral</i>)	Born VI	Entertainment (iconic dance moves)	Hugo Boss, Netflix, Adidas, Bershka
Quitéria Jesus (@quiteria.eu)	1K	Human	Virtual free agent (undisclosed)	Born VI	Expertise (body positivity and anti-harassment)	None
Shudu (@shudu.gram)	249 K	Human	Virtual free agent (by <i>the Diigitals</i>)	Born VI	Expertise (fashion)	Louis Vuitton, Air Jordan, Ferragamo

*Retrieved from Instagram, YouTube, TikTok, Twitter, Twitch and Facebook on February 11, 2023

Table 3.
The Entity-Referent Framework Authenticity Types:
True-to-Ideal, True-to-Fact, and True-to-Self

	True-to-Ideal	True-to-Fact	True-to-Self
Abstract Definition	Entity's attributes correspond with a socially determined standard (i.e., an ideal).	Claims about an entity corresponds with the actual state of affairs (i.e., a fact).	Entity's behavior corresponds with its intrinsic motivations (i.e., self) as opposed to extrinsic motivations.
Elaboration of Definition	The ideal referent is a social construct—a human concoction—that may change over time and may be disputed.	The fact referent represents an underlying fixed reality. A fact may refer to an event(s) that has occurred or to a physical entity's innate properties.	The self-referent represents an underlying innate reality yet is psychological. Intrinsic motivation derives from one's true self (i.e., passions) whereas extrinsic motivation derives from external rewards (e.g., money, power) or punishments (e.g., losses, criticisms).
Authentic Example	A newly built home in Charleston, South Carolina (entity's attributes)	An eyewitness's testimony at a court trial (entity's claim)	A political candidate votes for a passing a bill (entity's behavior) on an issue that he

Inauthentic Example	conforms with the traditional style of homes in that region (ideal). A poet's work (entity's characteristics) is criticized by scholars because it did not follow poetic standards (ideal).	describes the events that occurred (fact). The person posing as John Doe on LinkedIn (entity's claim) is not John Doe (fact).	deeply cares about (self), yet the issue highly unpopular with his constituents. A musician creates music (entity's behavior) that differs from what he finds personally gratifying (self) but instead caters to the mainstream market and, thus, increases his profits.
Synonyms	Classic, typical, constant, traditional	Honest, transparent	Passionate, dedicated, inner-directed
Antonyms	Unusual, different, changing	Deceptive, deceitful, counterfeit	Sell out, commercialized, mainstreamed

Table 4.
Profile details of industry expert participants.

Alias	Gender	Location	Position	Domain of expertise
Martine	Female	France	Founder/CEO	Artificial reality, branding
Grégory	Male	France	Creative Director	Digital marketing, digital strategy, advertising
Jason	Male	United States	Founder/CEO	VI, digital human, avatars, metaverse, virtual identity
Gabrielle	Female	Germany	Contributing Writer	VIs, digital fashion, and Metaverse
Stefaan	Male	Netherlands	Operations Lead	Artificial reality, metaverse, and digital Fashion
Léon	Male	France	Strategist	Marketing digital, metaverse, avatars, and NFTs
JianGuo	Male	Netherlands	Founder/CEO	Avatars, metaverse, digital human, virtual identity, and NFTs
Adrienne	Female	France	Expert Speaker	Future, trends, prospective and sustainable world
Karla	Female	Austria	Strategist	Future, trends, brand strategy, luxury, and digital fashion
Quentin	Male	France	Founder/CEO	VIs, brand content, social network, and digital strategy
Luke	Male	United States	Founder/CEO	Avatars, privacy, VIs, and pseudonymity

Table 5.
Manifestations of TTI, TTF, and TTS Authenticity in a VI Context.

VI Authenticity Manifestations	Definition	Elaboration
True-to-Ideal	VIs are manmade creations and, thus, social constructs. VIs can be TTI authentic if their characteristics match the VI ideal.	
<i>TTI Authentic Human</i>	The degree to which the VI’s attributes correspond to a humanlike ideal.	VI behaves and looks like a human, such as expressing emotions, interacting with the audience, having complexity via an enriched storyline, engaging in creative pursuits, and looking like a human, but not “too” perfect.
<i>TTI Authentic Virtual Entity</i>	The degree to which the VI’s attributes correspond to a non-human virtual ideal.	VI may proclaim to be a non-human, such as a robot, cartoon figure, or simply a virtual entity. In this case, matching this proclaimed virtual identity, rather than a human ideal, will be authentic.
<i>TTI Authentic Character</i>	The degree to which the VI’s attributes correspond to its established character.	VI’s content matches the VI’s established storyline. “Out-of-character” content is inauthentic. Creating a VI “bible” or character card will help ensure VI content is “on-character”.
True-to-Fact	Since VIs are manmade creations, they have no underlying reality—no fact referent. A VI itself cannot be TTF authentic. However, elements associated with the VI can be TTF.	
<i>TTF Authentic Disclosure</i>	<i>The degree to which a VI’s creators communicate to consumers that the VI is not a real human.</i>	Creators’ communication that the VI is not a real person may range from explicit statements to implicit hints. Disclosure is most important when VI is human-looking (TTI Authentic Human) as to not mislead followers.
<i>TTF Authentic Virtuality</i>	<i>The degree to which the VI’s digital likeness is computer generated.</i>	A VI known to be virtual creates expectations that it is 100 percent computer generated with no use of human models.
True-to-Self	Since VIs have no underlying human reality, they have no self referent. A VI itself cannot be TTS authentic. However, the creator(s) of the VI can be TTS.	
<i>TTS Authentic Motivation</i>	<i>The degree to which the VI’s creator(s) is (are) intrinsically motivated to design and sustain the VI rather than extrinsically motivated to do so.</i>	VI creators are passionate about the VI creation process more so than chasing trends and profits. Consistency (TTI Authentic Character) leads to beliefs that the creator is passionate.
<i>TTS Authentic Autonomy</i>	<i>The degree to which the VI is controlled by a single individual with human agency.</i>	The agent controlling the VI may range from one individual to a team of individuals to AI (aggregate of humans). Autonomy decreases as the number of individuals controlling the VI increases, leading to an assortment of disperse motivations.

Appendix A

Interview guide with industry representatives - sample 1 (example of the version use with digital agency experts)

General questions on VIs

Can you describe your background and your relationship with the topic of VIs? How did you first come to work in this area?

What do you think about VIs recent developments? Have things changed for you / your firm in recent years, and if so, how?

What do you consider to be the key benefits of VIs?

What are the key challenges, in your opinion?

Business perspective on VIs

Management

How many VIs does your agency work with simultaneously?

How do you decide on the development of VIs? What are some of the key motivations for launching a new influencer?

How about their design and other characteristics? (Humanoid/ Animal/ Alien/ other object etc. Gender? Voice/Speech?)

How do you come up with storylines/images etc for the VI's posts?

Do you have a team specifically assigned to manage these tasks? More generally, which kind of competencies are needed – in your opinion – to develop and manage a VI?

How do you consider interactions between the VI and the consumer? How do you consider interactions on different platforms (e.g. Instagram, TikTok etc.)?

Collaboration with brands

What is – in your opinion – the primary intention of integrating VI into a firm's branding strategy (e.g. replacement, augmentation, or full collaboration)? Can you elaborate with some examples?

What do you consider a 'VI success'? What metrics do you use? Can you name a few projects that you consider particularly successful (your own and/or others)?

Vis and authenticity

How much importance do you attribute to authenticity in the VI context? How do you manage VI authenticity? How does this impact the brand collaboration?

Do consumers expect VIs to engage in typical behaviours (types of posts, communication style) that are distinct from actual human influencers?

Do you think it is important that the VI look and behave like a human? Why or why not?

Do you use human models in the creation of your VIs? To what extent?

Do you or the VI explicitly communicate that the VI is not human? Do you think most consumers are aware that the VI is not an actual human?

Do you think consumers believe that the VIs interest and passion about a sponsored brand are indicative of the agency?

Future outlook

In your opinion, what is the direction of VI-development in the future (say next 20 years)?

What are the major technological challenges associated with the use of VIs?

Overall, how would you characterise your views concerning the potential of VI / AI solutions in shaping the evolution of VIs?

Appendix B

Interview guide with social media users – sample 2

Digital experience

Can you introduce yourself briefly and describe your digital activities overall?

Are you active on social media platforms? Which ones? What are your main motivations for spending time on social media?

Are you an active gamer? If so, can you tell me a bit about your gaming experience?

Human influencers

Do you follow influencers? What are your main reasons for following influencers?

Can you characterize your relationship with your favourite influencers? Can you reflect upon how they might have evolved over time?

Have you ever purchased anything based on a recommendation of an influencer?

Virtual influencers

Are you familiar with any form avatars or virtual entities ? How do you perceive it?

Are you familiar with the concept of VI?

If the participant is familiar with VI

What do you think about this concept?

Can you recall the first time you encountered a VI? Can you recall your thoughts and / or feelings during the initial encounters?

Do you follow any VI? If yes, can you characterize your relationship with your favourite VI?

If the participant is not familiar with the concept, an explanation was provided, together with a short video presenting brief excerpts showcasing Lil Miquela and Shudu Gram

What do you think about this concept ? Could you consider following one of them ?

For all participants, whatever their familiarity with the concept

In your opinion, how do they compare to human influencers? What are some of the key similarities and differences ?

What do you consider the key benefits of following VIs for people?

Do you think VI could benefit for brands? Can you imagine purchasing products / services based on the recommendation of VI?

Authenticity and ethical considerations

Do you think VIs could be authentic? Why or why not? Do you think they are more or less authentic than human influencers?

Would you personally be more likely to follow human or virtual? Which one would be more convincing for product / service recommendation?

Do you view any ethical issues regarding VIs?

Future and the Metaverse

How do you see the future development of VIs (say next years)?

How do you envision the changes we might expect with the development of the metaverse? What do you anticipate to be the biggest opportunity? How about the biggest challenge?

REFERENCES

- Ameen, N., Cheah, J.H., Ali, F., El-Manstrly, D. & Kulyciute, R., (2023) 'Risk, trust, and the roles of human versus virtual influencers. *Journal of Travel Research*, <https://doi.org/10.1177/00472875231190601>
- Antonio Batista da Silva, O., & Paula, C. (2021). 'Humanized Robots': A Proposition of Categories to Understand Virtual Influencers [article]. *Australasian Journal of Information Systems*, 25. <https://doi.org/10.3127/ajis.v25i0.3223>
- Arsenyan, J., & Mirowska, A. (2021). Almost human? A comparative case study on the social media presence of virtual influencers. *International Journal of Human-Computer Studies*, 155, 102694. <https://doi.org/https://doi.org/10.1016/j.ijhcs.2021.102694>
- Audrezet, A., de Kerviler, G., & Guidry Moulard, J. (2020). Authenticity under threat: When social media influencers need to go beyond self-presentation. *Journal of Business Research*, 117, 557-569. <https://doi.org/https://doi.org/10.1016/j.ibusres.2018.07.008>
- Audrezet, A., & Koles, B. (2023). Virtual Influencer as a Brand Avatar in Interactive Marketing. In C. L. Wang (Ed.), *The Palgrave Handbook of Interactive Marketing* (pp. 353-376). Springer International Publishing. https://doi.org/10.1007/978-3-031-14961-0_16
- Aw, E. C.-X., & Labrecque, L. I. (2020). Celebrity endorsement in social media contexts: understanding the role of parasocial interactions and the need to belong. *Journal of Consumer Marketing*, 37(7), 895-908. <https://doi.org/https://doi.org/10.1108/JCM-10-2019-3474>
- Baklanov, N. (2019, January 15, 2023). The Top Instagram Virtual Influencers in 2019. *Hype - Journal*.
- Banet-Weiser, S. (2012). *Authentic™: The Politics of Ambivalence in a Brand Culture*. NYU Press.
- Beverland, M. B., & Farrelly, F. J. (2010). The quest for authenticity in consumption: Consumers' purposive choice of authentic cues to shape experiences outcomes. *Journal of Consumer Research*, 36, 838-856. <https://doi.org/10.1086/615047>

- Block, E., & Lovegrove, R. (2021). Discordant storytelling, 'honest fakery', identity peddling: How uncanny CGI characters are jamming public relations and influencer practices. *Public Relations Inquiry*, 10(3), 265-293. <https://doi.org/10.1177/2046147x211026936>
- Brown, S., Kozinets, R. V., & Sherry, J. F. (2003). Teaching Old Brands New Tricks: Retro Branding and the Revival of Brand Meaning. *Journal of Marketing*, 67(3), 19-33. <https://doi.org/10.1509/jmkg.67.3.19.18657>
- Cheung, F., & Leung, W.-F. (2021). Virtual influencer as celebrity endorsers. In C. Cobanoglu & V. D. Corte (Eds.), *Advances in Global Services and Retail Management* (Vol. 2). USF M3 Publishing. <https://doi.org/10.5038/9781955833035>
- Colton, S., Pease, A., Guckelsberger, C., McCormack, J., & Llano, T. (2020). On the machine condition and its creative expression. 11th International Conference on Computational Creativity (ICCC'20),
- 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>
- Deng, F., & Jiang, X. (2023). Effects of human versus virtual human influencers on the appearance anxiety of social media users [Article]. *Journal of Retailing and Consumer Services*, 71. <https://doi.org/10.1016/j.jretconser.2022.103233>
- Drenten, J., & Brooks, G. (2020). Celebrity 2.0: Lil Miquela and the rise of a virtual star system. *Feminist Media Studies*, 20(8), 1319-1323. <https://doi.org/https://doi.org/10.1080/14680777.2020.1830927>
- Duffy, B. E., & Hund, E. (2019). Gendered Visibility on Social Media: Navigating Instagram's Authenticity Bind [social media, visibility, gender, authenticity, Instagram, influencers]. *International Journal of Communication*, 13, 4983-5002. <https://ijoc.org/index.php/ijoc/article/view/11729/2821>
- Eng, B., & Jarvis, C. B. (2020). Consumers and their celebrity brands: how personal narratives set the stage for attachment. *Journal of Product & Brand Management*, 29(6), 831-847. <https://doi.org/10.1108/JPBM-02-2019-2275>
- Eunjin, K., Donggyu, K., Zihang, E., & Heather, S. (2023). The next hype in social media advertising: Examining virtual influencers' brand endorsement effectiveness [article]. *Frontiers in Psychology*, 14. <https://doi.org/10.3389/fpsyg.2023.1089051>
- Foster, J. K., McLelland, M. A., & Wallace, L. K. (2021). Brand avatars: impact of social interaction on consumer-brand relationships. *Journal of Research in Interactive Marketing, ahead-of-print(ahead-of-print)*. <https://doi.org/10.1108/JRIM-01-2020-0007>
- Franke, C., Groeppel-Klein, A., & Müller, K. (2022). Consumers' Responses to Virtual Influencers as Advertising Endorsers: Novel and Effective or Uncanny and Deceiving? [Article]. *Journal of Advertising*, 1-17. <https://doi.org/10.1080/00913367.2022.2154721>
- Freud, S. (2004). The Uncanny (1919). In D. Sandner (Ed.), *Fantastic Literature: A Critical Reader* (pp. 74-101). Greenwood.
- Garretson, J. A., & Niedrich, R. W. (2004). Spokes-Characters: Creating Character Trust and Positive Brand Attitudes. *Journal of Advertising*, 33(2), 25-36. <https://doi.org/10.1080/00913367.2004.10639159>
- Grayson, K., & Martinec, R. (2004). Consumer perceptions of iconicity and indexicality and their influence on assessments of authentic market offerings. *Journal of Consumer Research*, 31, 296-312. <https://doi.org/10.1086/422109>

- Guba, E. G., & Lincoln, Y. S. (1994). Competing paradigms in qualitative research. In N. K. Denzin, Y. S. Lincoln, N. K. Denzin, & Y. S. Lincoln (Eds.), *Handbook of Qualitative Research*. (pp. 105-117). Sage Publications, Inc.
<http://search.ebscohost.com/login.aspx?direct=true&db=psyh&AN=1994-98625-005&site=ehost-live>
- Ho, C.-C., & MacDorman, K. F. (2010). Revisiting the uncanny valley theory: Developing and validating an alternative to the Godspeed indices. *Computers in Human Behavior* 26(6), 1508-1518. <https://doi.org/https://doi.org/10.1016/j.chb.2010.05.015>
- Hudders, L., De Jans, S., & De Veirman, M. (2021). The commercialization of social media stars: a literature review and conceptual framework on the strategic use of social media influencers. *International Journal of Advertising*, 40(3), 327-375.
<https://doi.org/10.1080/02650487.2020.1836925>
- Jin, S. V., & Muqaddam, A. (2019). Product placement 2.0: Do Brands Need Influencers, or Do Influencers Need Brands? *Journal of Brand Management*, 26(5), 522-537.
- Jin, S. V., & Ryu, E. (2020). I'll buy what she's #wearing: The roles of envy toward and parasocial interaction with influencers in Instagram celebrity-based brand endorsement and social commerce. *Journal of Retailing and Consumer Services*, 55(July), 1-15. <https://doi.org/https://doi.org/10.1016/j.jretconser.2020.102121>
- Johnson, A. R., Thomson, M., & Jeffrey, J. (2015). What Does Brand Authenticity Mean? Causes and Consequences of Consumer Scrutiny toward a Brand Narrative. In *Brand Meaning Management* (Vol. 12, pp. 1-27). Emerald Group Publishing Limited.
<https://doi.org/10.1108/S1548-643520150000012001>
- Jung, C. G. (1953). *Two essays in analytical psychology*. Pantheon.
- Kelley, H. H. (1987). Attribution in social interaction. In *Attribution: Perceiving the causes of behavior*. (pp. 1-26). Lawrence Erlbaum Associates, Inc.
- Kim, H., & Park, M. (2023). Virtual influencers' attractiveness effect on purchase intention: A moderated mediation model of the Product–Endorser fit with the brand [Article]. *COMPUTERS IN HUMAN BEHAVIOR*, 143, N.PAG-N.PAG.
<https://doi.org/10.1016/j.chb.2023.107703>
- Klein, H. K., & Myers, M. D. (1999). A Set of Principles for Conducting and Evaluating Interpretive Field Studies in Information Systems. *MIS Quarterly*, 23, 67-94.
- Koles, B., & Nagy, P. (2021). Digital object attachment [Review Article]. *Current Opinion in Psychology*, 39, 60-65. <https://doi.org/https://doi.org/10.1016/j.copsy.2020.07.017>
- Kucharska, W., Confente, I., & Brunetti, F. (2020). The power of personal brand authenticity and identification: top celebrity players' contribution to loyalty toward football. *Journal of Product & Brand Management*, 29(6), 815-830.
<https://doi.org/10.1108/JPBM-02-2019-2241>
- Langlois, J. H., & Roggman, L. A. (1990). Attractive faces are only average. *Psychological Science*, 1(2), 115-121.
- Laszkiewicz, A., & Kalinska-Kula, M. (2023). Virtual influencers as an emerging marketing theory: A systematic literature review [Article]. *International Journal of Consumer Studies*, 1. <https://doi.org/10.1111/ijcs.12956>
- Leaver, T., Highfield, T., & Abidin, C. (2020). *Instagram: Visual Social Media Cultures*. Wiley.
- Lee, A. S., & Baskerville, R. (2003). Generalizing Generalizability in Information Systems Research. *Information Systems Research*, 14, 221-243.
- Lee, J. A., & Eastin, M. S. (2021). Perceived authenticity of social media influencers: scale development and validation. *Journal of Research in Interactive Marketing*, 15(4), 822-841. <https://doi.org/10.1108/JRIM-12-2020-0253>

- Leigh, T. W., Peters, C., & Shelton, J. (2006). The consumer quest for authenticity: The multiplicity of meanings within the MG subculture of consumption. *Journal of the Academy of Marketing Science*, 34(4), 481-493. <https://doi.org/10.1177/0092070306288403>
- Leung, F. F., Gu, F. F., Li, Y., Zhang, J. Z., & Palmatier, R. W. (2022). Influencer Marketing Effectiveness. *Journal of Marketing*, 86(6), 93-115. <https://doi.org/10.1177/00222429221102889>
- Lou, C., Kiew, S. T. J., Chen, T., Lee, T. Y. M., Ong, J. E. C., & Phua, Z. (2022). Authentically Fake? How Consumers Respond to the Influence of Virtual Influencers. *Journal of Advertising*, 1-18. <https://doi.org/10.1080/00913367.2022.2149641>
- MacInnis, D. J. (2011). A Framework for Conceptual Contributions in Marketing. *Journal of Marketing*, 75(4), 136-154. <https://doi.org/10.1509/jmkg.75.4.136>
- Mathur, M. B., & Reichling, D. B. (2016). Navigating a social world with robot partners: A quantitative cartography of the Uncanny Valley. *Cognition*, 146, 22-32. <https://doi.org/10.1016/j.cognition.2015.09.008>
- Miao, F., Kozlenkova, I. V., Wang, H., Xie, T., & Palmatier, R. W. (2022). An Emerging Theory of Avatar Marketing [Article]. *Journal of Marketing*, 86(1), 67-90. <https://doi.org/10.1177/0022242921996646>
- Mirowska, A., & Arsenyan, J. (2023). Sweet escape: The role of empathy in social media engagement with human versus virtual influencers [Article]. *International Journal of Human - Computer Studies*, 174. <https://doi.org/10.1016/j.ijhcs.2023.103008>
- Miyake, E. (2023). I am a virtual girl from Tokyo: Virtual influencers, digital-orientalism and the (Im)materiality of race and gender. *Journal of Consumer Culture*, 23(1), 209-228. <https://doi.org/10.1177/14695405221117195>
- Morhart, F., Malär, L., Guèvremont, A., Girardin, F., & Grohmann, B. (2015). Brand authenticity: An integrative framework and measurement scale. *Journal of Consumer Psychology*, 25(2), 200-218. <https://doi.org/https://doi.org/10.1016/j.jcps.2014.11.006>
- Mori, M. (1970). Bukimi no tani (The uncanny valley). *Energy*, 7(4), 33-35.
- Mori, M. (2012). The Uncanny Valley: The Original Essay by Masahiro Mori. *IEEE Spectrum*. <https://spectrum.ieee.org/the-uncanny-valley>
- Mori, M., MacDorman, K. F., & Kageki, N. (2012). The Uncanny Valley [From the Field]. *IEEE Robotics & Automation Magazine*, 19(2), 98-100. <https://doi.org/10.1109/MRA.2012.2192811>
- Moulard, J. G., Garrity, C. P., & Rice, D. H. (2015). What Makes a Human Brand Authentic? Identifying the Antecedents of Celebrity Authenticity. *Psychology & Marketing*, 32(2), 173-186. <https://doi.org/https://doi.org/10.1002/mar.20771>
- Moulard, J. G., Raggio, R. D., & Folse, J. A. G. (2016). Brand Authenticity: Testing the Antecedents and Outcomes of Brand Management's Passion for its Products. *Psychology & Marketing*, 33(6), 421-436. <https://doi.org/https://doi.org/10.1002/mar.20888>
- Moulard, J. G., Raggio, R. D., & Folse, J. A. G. (2021). Disentangling the meanings of brand authenticity: The entity-referent correspondence framework of authenticity. *Journal of the Academy of Marketing Science*, 49(1), 96-118. <https://doi.org/10.1007/s11747-020-00735-1>
- Moulard, J. G., Rice, D. H., Garrity, C. P., & Mangus, S. M. (2014). Artist Authenticity: How Artists' Passion and Commitment Shape Consumers' Perceptions and Behavioral

- Intentions across Genders. *Psychology & Marketing*, 31(8), 576-590.
<https://doi.org/https://doi.org/10.1002/mar.20719>
- Moustakas, E., Lamba, N., Mahmoud, D., & Ranganathan, C. (2020, 15-19 June 2020). Blurring lines between fiction and reality: Perspectives of experts on marketing effectiveness of virtual influencers. 2020 International Conference on Cyber Security and Protection of Digital Services (Cyber Security).
- Mrad, M., Ramadan, Z., & Nasr, L. I. (2022). Computer-generated influencers: the rise of digital personalities [Journal]. *Marketing Intelligence & Planning*, 40(5), 589-603.
<https://doi.org/10.1108/MIP-12-2021-0423>
- Napoli, J., Dickinson, S. J., Beverland, M. B., & Farrelly, F. (2014). Measuring consumer-based brand authenticity. *Journal of Business Research*, 67(6), 1090-1098.
<https://doi.org/https://doi.org/10.1016/j.ibusres.2013.06.001>
- Napoli, J., Dickinson-Delaporte, S., & Beverland, M. B. (2016). The brand authenticity continuum: strategic approaches for building value. *Journal of Marketing Management*, 32(13-14), 1201-1229.
<https://doi.org/10.1080/0267257X.2016.1145722>
- Newman, G. E., & Dhar, R. (2014). Authenticity is Contagious: Brand Essence and the Original Source of Production. *Journal of Marketing Research*, 51(3), 371-386.
<https://doi.org/10.1509/jmr.11.0022>
- Nunes, J. C., Ordanini, A., & Giambastiani, G. (2021). The Concept of Authenticity: What It Means to Consumers. *Journal of Marketing*, 85(4), 1-20.
<https://doi.org/10.1177/0022242921997081>
- Ozdemir, O., Kolfal, B., Messinger, P. R., & Rizvi, S. (2023). Human or virtual: How influencer type shapes brand attitudes [Article]. *COMPUTERS IN HUMAN BEHAVIOR*, 145.
<https://doi.org/10.1016/j.chb.2023.107771>
- Parmentier, M.-A., Fischer, E., & Reuber, A. R. (2013). Positioning person brands in established organizational fields. *Journal of the Academy of Marketing Science*, 41(3), 373-387.
<https://doi.org/10.1007/s11747-012-0309-2>
- Patton, M. Q. (2015). *Qualitative research & evaluation methods: Integrating theory and practice* (4th ed.). Sage Publications.
- Pöyry, E., Pelkonen, M., Naumanen, E., & Laaksonen, S.-M. (2019). A Call for Authenticity: Audience Responses to Social Media Influencer Endorsements in Strategic Communication. *International Journal of Strategic Communication*, 13(4), 336-351.
<https://doi.org/https://doi.org/10.1080/1553118X.2019.1609965>
- Robinson, B. (2020). Towards an Ontology and Ethics of Virtual Influencers [article]. *Australasian Journal of Information Systems*, 23, 333-345.
<https://doi.org/https://doi.org/10.3127/ajis.v24i0.2807>
- Sands, S., Campbell, C., Plangger, K., & Ferraro, C. (2022). Unreal influence: Leveraging AI in influencer marketing [Article]. *European Journal of Marketing*, 56(6), 1721-1747.
<https://doi.org/10.1108/EJM-12-2019-0949>
- Sands, S., Ferraro, C., Demsar, V., & Chandler, G. (2022). False idols: Unpacking the opportunities and challenges of falsity in the context of virtual influencers [Article]. *Business Horizons*, 65(6), 777-788. <https://doi.org/10.1016/j.bushor.2022.08.002>
- Schlosser, A. E., White, T. B., & Lloyd, S. M. (2006). Converting Web Site Visitors into Buyers: How Web Site Investment Increases Consumer Trusting Beliefs and Online Purchase Intentions. *Journal of Marketing*, 70(2), 133-148.
- Spiggle, S., Nguyen, H. T., & Caravella, M. (2012). More than Fit: Brand Extension Authenticity. *Journal of Marketing Research*, 49(6), 967-983. <https://doi.org/10.1509/jmr.11.0015>

- Stein, J.-P., Linda Breves, P., & Anders, N. (2022). Parasocial interactions with real and virtual influencers: The role of perceived similarity and human-likeness [Article]. *New Media & Society*, 1. <https://doi.org/10.1177/14614448221102900>
- Tafesse, W., & Wood, B. P. (2021). Followers' engagement with instagram influencers: The role of influencers' content and engagement strategy. *Journal of Retailing and Consumer Services*, 58, 1-9. <https://doi.org/https://doi.org/10.1016/j.jretconser.2020.102303>
- Thomas, V. L., & Fowler, K. (2021). Close Encounters of the AI Kind: Use of AI Influencers As Brand Endorsers [Article]. *Journal of Advertising*, 50(1), 11-25. <https://doi.org/10.1080/00913367.2020.1810595>
- Tsai, W.-H. S., Liu, Y., & Chuan, C.-H. (2021). How chatbots' social presence communication enhances consumer engagement: the mediating role of parasocial interaction and dialogue. *Journal of Research in Interactive Marketing*, 15(3), 460-482. <https://doi.org/10.1108/JRIM-12-2019-0200>
- The Ultimate Virtual Creators Report*. (2022). (Influencer Marketing Hub, Issue. <https://influencermarketinghub.com/virtual-creators-report/>
- Um, N. (2023). Predictors Affecting Effects of Virtual Influencer Advertising among College Students. *Sustainability*, 15(8). <https://doi.org/10.3390/su15086388>
- Wang, E. S.-T., & Hu, F.-T. (2022). Influence of self-disclosure of Internet celebrities on normative commitment: the mediating role of para-social interaction. *Journal of Research in Interactive Marketing*, 16(2), 292-309. <https://doi.org/10.1108/JRIM-09-2020-0194>
- Wang, N. (1999). Rethinking authenticity in tourism experience. *Annals of Tourism Research*, 26(2), 349-370. [https://doi.org/https://doi.org/10.1016/S0160-7383\(98\)00103-0](https://doi.org/https://doi.org/10.1016/S0160-7383(98)00103-0)
- Wolcott, H. F. (1994). *Transforming qualitative data: Description, analysis, and interpretation*. Sage publications.
- Xie-Carson, L., Magor, T., Benckendorff, P., & Hughes, K. (2023). All hype or the real deal? Investigating user engagement with virtual influencers in tourism [Article]. *Tourism Management*, 99. <https://doi.org/10.1016/j.tourman.2023.104779>
- Yunseulchoi, & Lee, K. Y. (2013). Measuring SNS authenticity and Its Components by Developing Measurement Scale of SNS authenticity. *The Korean Journal of Advertising*, 24, 157-179.