



Is it real or not? construction of meaning and identity in virtual influencer marketing[☆]

Jamie Thompson^{a,*}, Reika Igarashi^b, Agata Krowinska^a, Ashleigh Logan-McFarlane^a

^a Edinburg Napier University, United Kingdom

^b University of Glasgow, United Kingdom

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ABSTRACT

Virtual influencers (VIs) are an emerging type of social media influencer. Through a sequential mixed-method research design, this research employs the theoretical lens of symbolic interactionism to explain how social media users construct meaning for the identity of VIs and how this guides their interactions and engagement with VIs. Study 1 explores the construction of meaning by analysis of 573 posts and 57,086 social media comments. Based on the symbolic interactionism and shared reality theories, Study 2 tests the relationship between key concepts (i.e., anthropomorphism, shared reality, digital escapism, and positive affect) using an online survey collected from 209 VI followers. This study shows that consumers negotiate the reality of VIs in the comments section with an emphasis on anthropomorphizing. Furthermore, the results of structural equation modelling suggest that followers' perceptions of VIs' moral and cognitive anthropomorphism influence perceived shared reality, which ultimately results in positive affect and VI engagement.

1. Introduction

Within the growing sphere of social media influencers, there is the emerging category of 'virtual influencers (VI)' who are entirely computer-generated characters (Koles et al., 2024; Yan et al., 2024; Yu et al., 2024). These human-like VIs are not restrained by limitations such as sleep and sickness and can be rendered in a variety of contextual situations with a simple background – making them an increasingly popular, flexible, and cheap option for marketing campaigns (Belanche et al., 2024; Franke et al., 2023; Gerrath et al., 2024; Stein et al., 2022; Yu et al., 2024; Zhou et al., 2024). The use of VIs has become increasingly mainstream with over 50 % of marketers considering incorporating virtually-generated avatars in their marketing campaigns (Influencer Marketing Hub, 2024).

The literature on VIs is growing. To date, the research has focused on investigating the effectiveness of VIs against human influencers (e.g., Franke et al., 2023; Igarashi et al. 2024; Stein et al., 2022), consumers' perceptions of VIs (e.g., Gerrath et al., 2024; Muniz et al., 2023; Thomas & Fowler, 2021; Zhou et al., 2024) and the effective design of VIs (Yu et al., 2024). However, research has not addressed how consumers form meaningful connections and relationships with VIs (Aw & Agnihotri,

2024). To address this gap, this research builds on extant VI literature by exploring how consumers' behaviors, interactions, and engagement are impacted by the meaning they construct for VIs from the theory of symbolic interactionism through a netnography (Blumer, 1986; Fine & Tavori, 2019; Thompson & Taheri 2020) (Study 1), followed by a survey study (Study 2) to corroborate our findings from Study 1 using literature on shared reality (e.g., Echterhoff, Higgins & Levine, 2009; Rossignac-Milon et al., 2021; 2024). Particularly, this research seeks to answer the following research questions:

RQ1: How do consumers construct meaning for the identity of VIs?

RQ2: How do consumers interact with VIs based on the constructed understanding of their identity and reality?

2. Theoretical Background: Symbolic interactionism

To answer our RQs, this research adopts a symbolic interactionist underpinning that prescribes the units of analysis as the interactions between an individual, other people, and their environment (Fine & Tavori, 2019; Thompson & Taheri 2020). Symbolic interactionism has three tenets defined by Blumer (1986, p. 2): First, "human beings act towards things on the basis of the meanings that the things have for

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* Corresponding author.

E-mail address: j.thompson@napier.ac.uk (J. Thompson).

them”; Second, “the meaning of such things is derived from, or arises out of, the social interaction that one has”; and third, “meanings are handled in, and modified through, an interpretative process”. For symbolic interactionists, interpretation and meaning guides situational behavior (Blumer, 1986). Meanings are not pre-existing in society but are the product of interaction and evolve through social exchanges between individuals and their environment (Fine & Tavory, 2019; Scott, 2018). Therefore, symbolic interactionism provides an epistemic platform to understand how meaning is constructed through our language, comments, and communication (Thompson & Taheri, 2020).

Social media facilitates mass exposure to interacting individuals who may possess different meanings for phenomena and different understandings of information being discussed and exchanged (Fujita et al., 2020). This is relevant to influencer marketing as influencers can communicate as a form of self-presentation to influence the meanings followers may have for them (Baboo et al., 2022). Through interaction on social channels, peoples’ meanings, values, understanding, and opinions change in a conforming or divergent nature as they receive more knowledge (Laor, 2022; Lawless et al., 2022). Therefore, this theoretical perspective focuses the analysis on peoples’ interactions with VIs’ Instagram posts. Specifically, how these interactions construct meaning, and how the meaning a follower creates for a virtual influencer influences their subsequent behavior.

2.1. Influencers and interactionism

Consumers construct evaluations based on their first interaction with a social media influencer, and upon this interaction, users decide whether they wish to behaviorally manifest their engagement (i.e. liking posts, commenting, sharing) (Breves et al., 2021). This aligns with the first tenet of symbolic interactionism, that how users relate to the identity and personalized characteristics of an influencer has a role in guiding their positive engagement and interactions (Aw & Chuah, 2021; Yuan et al., 2016). Indeed, the literature has emphasized parasocial relationships, as a form of bi-directional and intimate one-way relationships followers form with influencers, associated with an imagined deep and close connection (Breves et al., 2021; Reinikainen et al., 2020). Such parasocial relationships give influencers greater power over consumers who seek to imitate their beliefs and behaviors (Aw & Chuah, 2021).

VIs can be distinguished from social media influencers by four unique elements: ease of customization, flexibility, automation of content, and the fact that they are owned by agencies; highlighting how their posts are manufactured and generated by external organizations (Mouritzen et al., 2023). Although the literature on VIs is growing, research shows equivocal findings as some consumers have found VIs to be creepy and socially distant (Kim & Baek, 2024; Yan et al., 2024) and incapable of certain sensory capacities (Zhou et al., 2024), making them less trustworthy than traditional influencers (Sands et al., 2022a). Other research has found consumers hold similar perceptions about VIs and human influencers (Thomas & Fowler, 2021) and they are open to interacting with VIs though they perceive less human-likeness and are affected by the uncanny valley effect (Sands et al., 2022b; Stein et al., 2022) VIs were found to be most effective when users perceive them as truly human-like in terms of appearance, emotional expressions, and social presence (Koles et al., 2024; Yan et al., 2024; Yu et al., 2024). Despite these inroads into VI research, no study has explored the preceding process of how consumers make sense of VIs and how such sense-making informs their interactions and exchanges on platforms such as Instagram.

3. Research design

We adopted a sequential mixed-methodology which consisted of a qualitative netnography followed by a questionnaire. The explorative netnography adds rich and deep understanding to consumers’ meaning

construction amongst VIs, while the questionnaire extends the understanding of users’ interaction and engagement with VIs (McKenna et al., 2017). The research was conducted in sequence to enable qualitative research to inform our quantitative conceptual model (Stathakopoulos et al., 2022).

4. Study 1. Qualitative Phase

4.1. Netnography data collection

Data were collected using an exploratory netnography to understand the community of consumers who choose to interact with and comment on the posts of VIs (Kozinets, 2002). A netnography involves a researcher engaging with an online context longitudinally to tell the story of users within this space, getting close to their real values and understandings (Canavan, 2021; Kozinets, 2010). As research on VIs is still in its infancy (Sands et al., 2022b), an exploratory netnography was appropriate to understand how community members construct meaning for identity through their online interactions (Canavan, 2021; Kozinets, 2002).

We focused our netnography on Instagram as VIs exist with the greatest number of followers on this social channel. We used a subjective sampling method to select VIs ($n = 10$) (4 male and 6 female) who were deemed most ‘realistic’ or ‘human-like’ by the research team. Yan et al. (2024) make a distinction between ‘mimic-human’ VIs versus ‘non-human’ or ‘animated-human’ VIs with animated designs, making them visually distinct from human influencers. We sampled ‘mimic-human’ VIs as some scholars have suggested consumers find it difficult to determine their realness and distinguish them from traditional social media influencers (Franke et al., 2023; Koles et al., 2024). This provides a greater opportunity for us to understand how users construct meaning for VIs and interact accordingly via the comments sections, thus supporting us in answering our Research Questions.

All sampled VIs had at least 10,000 followers (at the time of the data collection in 2022) and received on average at least ten comments per post. The sampled VIs posted on a range of topics and interests such as environment, lifestyle, and sport. We undertook a passive netnographic procedure by not revealing our identity nor engaging with comments or posts but focusing on the natural exchanges within the comments on each VI’s page (Canavan, 2021).

Our data source consisted of the posts made by VIs on Instagram and the comments and interactions on each post (Canavan, 2021). As outlined by Caplan and Purser (2019), we adopted a simple ‘copy and paste’ procedure for all social media comments to input them into an Excel where every comment under each post was provided its own row, and all usernames were automatically removed to clean the data and maintain participant confidentiality. Though scraping tools can offer greater automation, this misses many contextual factors that can be used for analysis, and programmatic extraction of data on Instagram is strictly prohibited by the platform’s Terms of Use.

Data collection continued on the posts of each VI’s page for a minimum of 6 months’ worth of posts (for VIs with a larger following and a greater number of comments per post) and a maximum of 24 months (for VIs with a smaller following). This ensured we had longitudinal data to reach rich saturation, where we had thick and textured meaning to address our research questions and theory was fully explained with evidence for abstraction (Morse, 2015). In total, we analyzed the content of 10 VI pages, 573 posts (including photos, reels, and videos), and 57,086 comments. We used Instagram’s ‘translate’ function to analyze non-English comments. We did not collect individual consent from research participants as it would have been unrealistic for this volume of data. Yet, as advised by McKenna et al. (2017), we collected data only from public (not private) social media pages and ensured the anonymity of participants by withdrawing all personal information (such as usernames) from quotations used in the research findings.

they could share commonality of meaning with others (Echterhoff et al., 2009; Fujita et al., 2020; Laor, 2022) and explore to what extent VIs shared the physical reality they were accustomed to (Salem et al., 2013). Yet, other commenters wished to initiate confliction to dismiss this idea that VIs could share any sense of reality with people and mock those who perceived such a shared sense of reality.

4.2.2. Beauty

Commenters found value in the beauty of VIs and interacted expressively. Commenters used the ‘fire’ emoji (n = 708) to express their feelings that the virtual influencer was metaphorically ‘on fire’ or hot. The most common phrases used to describe VIs were Beautiful (n = 748), Cute (n = 187), Pretty (n = 118), Gorgeous (n = 97), Hot (n = 94), Sexy (n = 75), and Handsome (n = 69), as commenters appeared to find aesthetic value in the anthropomorphized physical appearance of the virtual influencer:

‘You look like an ethereal mythical creature. Something out of a Renaissance painting or a magical book. Absolutely breathtaking.’

Comment on MV11 posing for a photoshoot.

‘This is the most beautiful woman I have ever seen in my whole existence ... How perfect is this skin, I can’t stop looking at it and it’s very perfect.’

Comment on FVI3 posing for a photoshoot.

‘Excellent and when you say it, you become more beautiful and wonderful.’

Comment on FVI4.

Some phrases were more commonly associated with certain VIs and posts. For example, male VIs were more likely to be referred to as handsome and posts with more revealing outfits were more likely to receive sexually charged comments such as ‘sexy’ or ‘hot’:

‘Why are you so handsome, you are so beautiful, you look beautiful and I think your personality is like that.’

Comment on MVI3 staring into the distance.

‘I adore your body! You turn me on.’

Comment on FVI2 in a bikini.

‘The weather is not making you hot! Your making the weather HOT!! Super sexy!’

Comment on MVI2 sweating from the heat.

‘Your muscles are bulging. Hot AF’.

Comment on MVI4.

Previous studies on social media influencers have noted how positive perceptions of an influencer’s physical attractiveness can guide consumer behavioral intentions and social engagement (Farivar et al., 2022; Torres et al., 2019). However, within this theme, we found very few comments targeting VI developers for their skills at computer rendering, graphics, or CGI modelling. Instead, commenters visually anthropomorphized the VI and consistently used the word ‘you’ to express their comments on beauty and aesthetics (Epley et al., 2007; Golossenko et al., 2020). Thus, when compared to traditional social media influencer interactions, users go through an additional anthropomorphizing step before directing their messages directly to the computer-generated persona.

4.2.3. Discrimination

In contrast to the previous theme of Beauty, Instagram commenters also interacted with discriminatory comments based on the appearance of the VI. Users used emojis ‘sick face’ (n = 126) and ‘feeling sick’ (n = 112) to express how they felt sick at the physical attributes of the VI. For example, we found comments such as ‘Ewww’ and ‘Ugly AF’ were often used to describe FVI3.

However, these discriminatory comments were only found within the comments of female VIs. In fact, of the 238 instances of sick emojis being used in a discriminatory manner, only 2 were in the comment sections of male VIs. We found the discriminatory language was gendered and particularly critical of the anthropomorphized female body with an emphasis on trolling, which indicates an attempt to hurt

personal feelings and make the virtual influencer feel a sense of shame: ‘Why if you don’t have breasts do you feel the need to stick your butt out? If you don’t have a chest, then just accept it.’

Comment on FVI1.

‘Chest so flat, I can use them as mousepad.’

Comment on FVI2.

‘You know what is the deference between you and ground bcz you both are flat’.

Comment on FVI2.

As with the Beauty of VIs, commenters continued to use ‘you’ to direct their critique at the virtual influencer specifically:

‘Why is it that your teeth are loose and his nostrils are getting bigger.’

Comment on FVI2.

‘ur face is literally built like a 12yo beaver that lives on the west coast of canada, ur posts are insanely bad and it hurts my eyes to extents u wont believe.’

Comment on FVI2.

‘You look like a horrible useless mannequin.’

Comment on FVI3.

Very little academic research has explored the trolling, abuse, and harassment faced by social media influencers. While this may be more prominent amongst VIs due to users perceiving that they cannot ‘feel’ or they possess different emotional and sensory capabilities (Yu et al., 2024; Zhou et al., 2024), media outlets have also reported on the abuse, harassment, and trolling faced by traditional influencers (BBC, 2021). These findings are one of the first to examine the objectified and discriminatory language used to describe influencers. Even in the context of VIs, such abuse is personal to the physical appearance of the influencer, suggesting commenters perceive an anthropomorphized level of cognitive awareness and consciousness where the VI can interpret the comments and feel hurt and shame (Golossenko et al., 2020).

4.2.4. Affection

Comments expressing ‘love heart eyes’ (n = 1,240) and ‘love heart’ (n = 1,214) emoji with little verbal text were the most common comments under VIs’ posts. We also found 523 comments stating a variation of ‘I love you’. These loving comments were all directed to the virtual influencer as an anthropomorphized emotional, moral, and conscious person with no evidence of deep affection being directed toward the creator of the CGI content:

‘My love, if you were a rain, i would love to catch a cold’.

Comment on MVI1 who was in the rain

‘If your heart was a prison, I would like to be sentenced for life’.

Comment on FVI2.

Based on the affection some followers felt toward VIs, they interacted in the comments with romantic offers to escape to a place where they could spend time together physically:

‘Is it possible that a women like yourself would be in manhattan for a week? id love to treat you to a dinner.’

Comment on FVI2 with a New York background.

‘I just wish to sit with you and talk for 40 min about our lives’.

Comment on MVI3.

Some commenters interacted with deep and emotional declarations to illustrate their affection and recited poems directed at their favorite virtual influencer:

‘If you don’t post for one day! My life is not complete. I love you no matter what.’

Comment on MVI2.

‘My sweet love [MVI3].. True Love bothers those who don’t know it... But it’s not my fault...so I’ll keep showing my love for you... Not because I like to show up, but it’s like a heart vent... I’m sorry if my way of loving bothers you... But I love you And I’ll always say and I’ll do everything for you... whether or not others are bothered...’

Comment on MVI3.

‘You are so wonderful when you wake up in the morning glow.’

Your smile rises slightly under the sunlight.
 And you turn your face.
 Hiding your head under your pillow,
 Trying to deceive the light of day.'.

Comment on FVI6.

These comments reflect an intimate and emotional bi-directional relationship perceived between the follower and the virtual influencer, similar to a parasocial relationship discussed in previous studies of social media influencers (Breves et al., 2021; Reinikainen et al., 2020). Yet, the comments in this theme display a trend towards a more romantic obsession and desire for digital escapism (Hall-Philips et al., 2016; Lee & Ma, 2012) than has been presented in many of the narratives of social media influencers. This again, illustrates a process of anthropomorphism occurring prior to social interactions, showing that commenters find value in imagining escaping every-day life to meet up with VIs for romantic getaways.

4.2.5. Summary

Fig. 2 provides a visual summary of our thematic research findings. The netnographic analysis revealed that through their interactive comments, social media users wished to construct a common understanding and meaning for VIs in the comment sections and to understand to what extent they shared the same physical reality (Salem et al., 2013). While some commenters were dismissive of VIs and tried to enforce this view on others, Fig. 2 illustrates the alternative path, which shows how many users were anthropomorphizing VIs through their interactions in terms of their physical appearance (body image) as well as their conscious, emotional, and moral virtues, (e.g., their ability to interpret and respond to expressions of affection, romance, and abuse). Indeed, many acted upon such a shared sense of reality by declaring their affection and commented that they could escape their daily life to live a romantic life with the VI. In Study 2, we develop a conceptual framework to test the relationships between these concepts.

5. Study 2: Quantitative Phase

5.1. Conceptual model and research hypotheses

We develop and test a conceptual model (Fig. 3) with variables selected on the following criteria: 1) qualitative findings; 2) relevance to

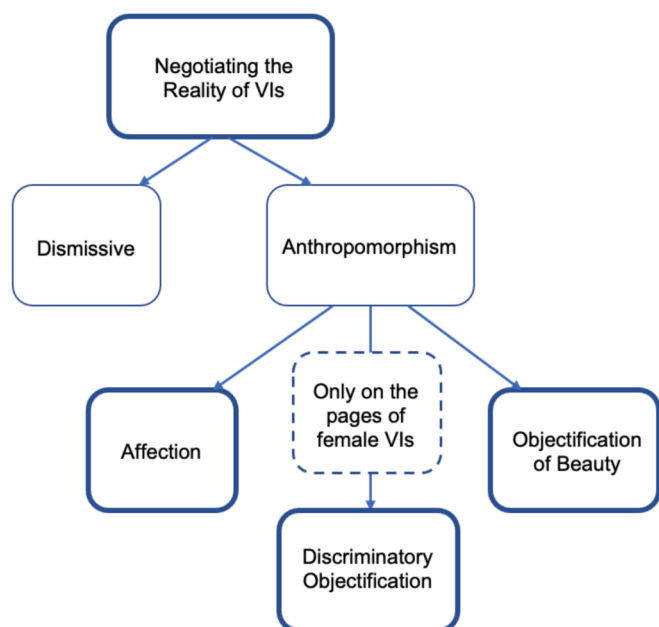


Fig. 2. Summary of Qualitative Findings.

the research questions on the development of meaning; 3) link to the key tenets of symbolic interactionism; 4) ensuring valuable research measures that make the greatest contribution (Stathakopoulos et al., 2022). Particularly, we develop our study hypotheses by drawing on symbolic interactionism theory complemented by the literature on shared reality (e.g. Echterhoff, Higgins & Levine, 2009; Rossignac-Milon et al. 2021).

5.1.1. The effect of anthropomorphism on shared reality

Anthropomorphism is the addition of human traits, motives, or feelings to the actual or imagined behavior of nonhuman agents (Epley et al., 2007). People have a natural urge to humanize non-living objects, which is frequently motivated by a desire to establish social connections (Epley et al., 2008). From a symbolic interactionist perspective, anthropomorphism is an emergent concept meaning consumers construct this through their interactions (likes and comments) with the VI (Fine & Tavory, 2019; Scott, 2018). Indeed, Study 1 findings reveal how consumers perceive the human-likeness of VIs from both a mental state (ability to show affection) and superficially (perceived attractiveness or unattractiveness), thus demonstrating key tenets of anthropomorphism (i.e., appearance, moral virtue, cognitive experience, conscious emotionality (Golossenko et al., 2020)). Importantly, anthropomorphism, such as VIs' realism (human-like appearance) and behavioral realism (the extent to which VIs mirror human behaviors in terms of communication and response type) are found to be crucial in positively affecting consumers' behavior, perception, and parasocial relationship (Dabiran, et al. 2024; Kim et al., 2024).

The literature defines perceived shared reality as the extent to which individuals find and share commonalities with others, such as perceived similarity and psychological closeness (Echterhoff et al., 2009; Salem et al., 2013). This sense of shared reality can be formed between both close partners and strangers through different cues such as shared interests, humor etc. (Rossignac-Milon et al. 2021). In a traditional influencer context, consumers are found to feel this strong sense of shared reality between themselves and the influencers they follow (Schouten et al., 2020). In fact, homophily (i.e., shared values) between influencers and consumers is found to be a strong antecedent to important outcomes such as influencer authenticity and social media post authenticity in both human and virtual influencers contexts (e.g., Han & Balabanis, 2023; Igarashi et al., 2024). Thus, combining both symbolic interactionism and shared reality theories, we predict that VIs' anthropomorphisms manifested by the appearance of VI, moral virtue, cognitive experience, and conscious emotionality may act as a symbolic interaction that over time creates this sense of shared reality, closeness, and intimacy (Ye et al., 2021), which establish a sense of true and real world feeling among VIs and consumers (Echterhoff et al. 2009; Echterhoff & Higgins, 2017; Rossignac-Milon 2024).

For example, previous research shows that humanized conversation with chatbots increases customers' perception of shared reality (Murtarelli et al., 2021) and anthropomorphized chatbots and products can make customers feel greater enjoyment and fun from their interactions (Han, 2021). Thus, anthropomorphized VIs may be perceived to have an increased sense of social presence (Sands et al., 2022a). Furthermore, given the volume of data from our qualitative findings where commenters appealed to VIs' appearance, morals, opinions, and emotions, we hypothesize that:

H1: Followers' perceptions of VIs' anthropomorphized (a) appearance, (b) moral virtue, (c) cognitive experience and (d) conscious emotionality positively affect perceived shared reality.

5.1.2. Moderating effect of escapism

As evidenced in Study 1, consumers interact with VIs to express their affection and to comment on how they wish to go on physical dates with them, illustrating a desire for an escape from reality. Escapism refers to a psychological state of immersion and absorption in which people try to get away from their daily routine (Gao et al., 2017). Escapism influences customers' cognitive and emotive states, which elevates their experience

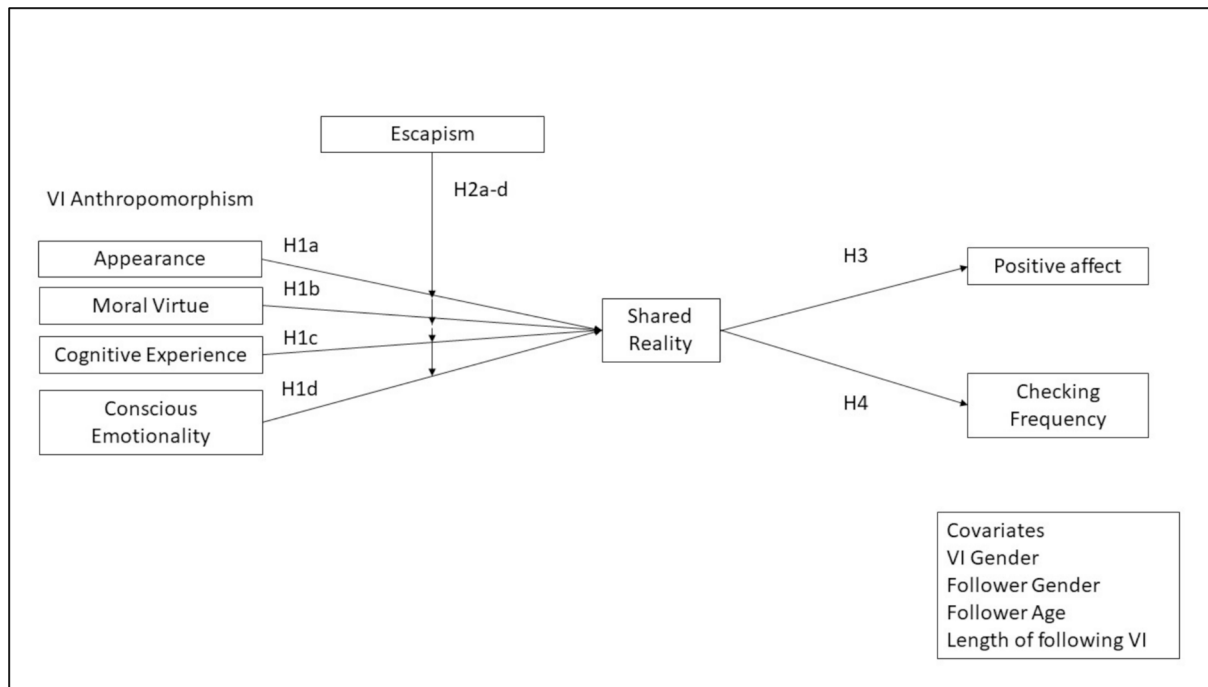


Fig. 3. Conceptual Model.

(Loureiro et al., 2021). Social media is one of the most impactful sources of consumer escapism (Maru & Dey, 2024) as these platforms can provide a virtual space where users escape from boredom and engage in activities providing emotional relief from the stress of everyday life (Lee & Ma, 2012).

Importantly, social media is considered as a mixed reality (Mouritzen et al. 2024), which sits in the middle of the reality-virtuality continuum (Milgram & Kishino, 1994) as it allows objects from both virtual and real, physical worlds to mix (Mouritzen et al., 2024). As such, social media creates an extremely immersive environment and experience for consumers, which makes online/digital escapism more enjoyable (Maru & Day, 2024, Mouritzen et al., 2024). Digital escapism plays an important role in enhancing social media engagement (Hall-Phillips et al., 2016). From a symbolic interactionist perspective, we argue that consumers with a higher tendency for escapism will have more meaningful interactions with VIs due to social media’s immersive nature and thus create a stronger shared reality. Accordingly, we expect the relationship between VI anthropomorphism and shared reality to be strengthened when an individual is also seeking escape from daily life as their commitment to the fiction of the anthropomorphized VI phenomena provides a break from the reality of the real-world:

H2: The positive relationships between followers’ perception of virtual influencer’s anthropomorphized (a) appearance, (b) moral virtue, (c) cognitive experience, and (d) conscious emotionality and shared reality are stronger for followers with high escapism.

5.1.3. Positive affect and Checking frequency

Consumer affective response is a conscious feeling of emotion and mood (Westbrook, 1987). A positive affect is measured by participants rating their positive feelings about an experience (Jiang & Punj, 2010). This outcome can be generated through interacting with individuals on social media as they develop positive symbolic meaning for phenomena by conversing with others (Fujita et al., 2020). Indeed, hedonic, enjoyable, and fun emoji usage is associated with positive affect on social media (Das et al., 2019), which is a key communicative message on VI posts whilst fun interactions are a key tenet of a shared close reality (Salem et al., 2013). Positive affect outcomes from non-verbal online communication are amplified by personal, strong, and close

relationships (Smith & Rose, 2020). The literature on shared reality shows that close partners construct a shared meaning system and share values and belief (e.g., Przybylinski & Andersen, 2015; Leikas et al., 2018). Thus, we predict that consumers’ shared reality with a VI will have a strong positive affect.

Checking frequency is a form of engagement that measures the number of times a user checks a particular social outlet (Ha et al., 2018). Smartphone checking frequency is often assessed as a problematic and addictive behavior (Toh et al., 2021). Yet, such frequent engagement on Instagram can be a sign of a follower feeling a sense of closeness and congruence with an influencer (Argyris et al., 2020). We expect that for those who construct a shared reality with a virtual influencer, this meaning development will guide their situational behavior towards more frequent interactions (Blumer, 1986). Indeed, shared and intimate interactions on social media encourage positive consumer engagement (Reich & Pittman, 2020). Thus, we hypothesize:

H3: Consumers’ perceived shared reality has a positive effect on positive affect.

H4: Followers’ perceived shared reality has a positive effect on the checking frequency of a virtual influencer’s page.

5.2. Sample and data collection

Data were collected using an online questionnaire which was distributed via Prolific in November 2022 to 500 Instagram users who followed a virtual influencer. We employed screening to ensure the quality and reliability of responses. Firstly, respondents were asked to name their favorite virtual influencer and the authors verified this against a virtual influencer database on virtualhumans.org. Secondly, we employed two attention-check questions at the beginning and middle of the questionnaire to ensure that respondents were not randomly selecting answers. After screening, our final sample consisted of 209 usable responses. Table 1 provides the demographic characteristics of our sample.

5.3. Measures

We measured all constructs using existing scales on a 5-point Likert

Table 1
Demographic Characteristics of the Sample.

N		209
Followers' Gender	Male	31.1 %
	Female	68.9 %
	Third gender	0 %
	Prefer not to say	0 %
Followers' Age		33.6 years (Average)
Followers' Education	Less than High school	0.5 %
	High school	27.8 %
	Undergraduate	44.5 %
	Postgraduate	25.4 %
	Prefer not to say	1.9 %
Length of Following the VI	Less than a year	72.2 %
	1 year	12.9 %
	2 years	6.2 %
	3 years	5.7 %
	4 years	1.0 %
	5 years	1.4 %
	6 years	0.5 %
VI's Gender	Male	15.3 %
	Female	79.4 %
	Other	5.3 %

scale (1 = strongly disagree, 5 = strongly agree). We modified the four-dimensional scale (appearance, moral virtue, cognitive experience, conscious emotionality) of brand anthropomorphism developed by Golossenko et al.'s (2020) to capture the followers' evaluation of VIs' anthropomorphism. Escapism was measured using the 4-item scale of Gao et al. (2017) and Shared reality was operationalized using Salem et al.'s (2013) 3-item scale. Positive affect was measured using Jiang and Punj's (2010) 3-item scale. Finally, following Toh (2021) we asked respondents to provide a numerical number in response to "How many times do you check [VI's name]'s Instagram page per week?" to capture the frequency of engagement with VI (i.e., check frequency). The full list of measures and items is provided in Table 2. We also measured the following four control variables: the Follower's age and gender, VI's gender, and the length of time following the virtual influencer. Note that followers' gender was treated as binary data since none of our sample selected third gender nor preferred not to say.

5.4. Study 2 analysis

5.4.1. Measure Validation

We assessed reliability and validity of the study measures by conducting confirmatory factor analysis (CFA) using AMOS version 26. In this process, 1 item from escapism was dropped due to low factor loading (<.60) (Anderson and Gerbing, 1988) and the CFA results shows indication of good fit since the normed chi-square is less than 3 (Hair, 2010) ($\chi^2 = 251.95$; $df = 168$; $\chi^2/df = 1.499$; $p < 0.00$), incremental fit indices exceeds the critical value of 0.07 (TLI = 0.964; CFI = 0.972) (Kline, 2016) and RMSEA was 0.049 which is lower than the cut-off point of 0.08 (MacCallum et al. 1996). Therefore, model fits the data well. Cronbach's alpha (α) values for each variable, average variance extracted (AVE) and composite reliability (CR) scores for each scale were above the threshold (Bagozzi and Yi 1988) (see Table 3). Further, we found discriminant and convergent validities of the study measures as square roots of AVEs exceeded all pairs of respective correlations (Fornell and Larcker 1981).

To reduce potential common method bias (CMB), we firstly employed the procedural remedies suggested by Podsakoff et al. (2003) e.g., randomly placing scales in the online questionnaire, assuring confidentiality, and providing that there are no right or wrong answers. Harman's single factor test and Lindell and Whitney's (2001) correlation comparison test with second to lowest positive correlation were conducted to assess CMB. Firstly, Harman's single factor test showed that the first factor explained 34.9 % of total variance. Secondly, comparison of the correlation comparison was conducted by calculating partial

Table 2
List of Measures and Factor Loadings.

Construct/underlying items	Standard loading
Virtual Influencer Anthropomorphism Glossenko et al. (2020)	
Appearance	
To what extent do you agree or disagree about [virtual influencer]...	
[virtual influencer] looks human-like	0.925
[virtual influencer] is life-like	0.722
[virtual influencer] has a human-like appearance	0.838
Moral Virtue	
To what extent do you agree or disagree with the following sentences about [virtual influencer]...	
[virtual influencer] is trustworthy	0.897
[virtual influencer] is honest	0.921
[virtual influencer] is principled	0.683
Cognitive Experience	
To what extent do you agree or disagree with the following sentences about [virtual influencer]...	
[virtual influencer] can engage in a great deal of thought	0.897
[virtual influencer] can imagine things on their own	0.897
[virtual influencer] is capable of reasoning	0.897
Conscious Emotionality	
To what extent do you agree or disagree with the following sentences about [virtual influencer]...	
[virtual influencer] can experience remorse over the actions which they deem to be shameful	0.925
[virtual influencer] can experience guilt when they hurt someone with their behaviour	0.955
• [virtual influencer] can experience shame when people have negative views and judgements about them	0.904
Escapism (Gao et al. 2017)	
To what extent do you agree or disagree with the following statements? [virtual influencer]...	
• helps me escape from the world of reality	0.725
• helps me escape from problems and pressures	0.931
• helps me escape from things that are unpleasant and worrisome	0.902
• makes me feel as if I am in a different world of reality	D
Shared Reality (Salem et al. 2013)	
How close do you feel to [virtual influencer]?	0.734
How pleasant is the interaction with [virtual influencer] for you?	0.832
How much fun do you have interacting with [virtual influencer]?	0.857
Positive Affect (Jiang and Punj 2010)	
To what extent does [virtual influencer] make you feel each of the following	
Pleasant	0.729
Happy	0.869
Enjoyed	0.759
Frequency of Checking VIs' Instagram Page (Toh et al., 2021)	
How many times do you check [VI's name]'s Instagram page per week?	N/A

Note: All factor loadings are significant at $p < 0.01$, D = deleted after the assessment of measurement model. N/A = not included in measurement model.

correlation using the second lowest correlation, $r = 0.123$ (Appearance and Cognitive Emotionality). The comparison of raw and common method variance (CMV) adjusted correlations revealed that 4 out of 21 (19 %) correlations have become insignificant (see Table 3). Thus, there is little chance that this study is affected by CMB.

5.4.2. Hypotheses Testing

We tested the study hypotheses using a structural equation model (SEM) using AMOS version 29. We used composite variables by calculating the mean value of each variable. The estimation produced good fit to the data ($\chi^2 = 40.48$, $df = 18$, $p = .002$; $\chi^2/df = 2.24$; $CFI = 0.978$, $TLI = 0.837$, $RMSEA = 0.078$). The results showed that anthropomorphized moral virtue and cognitive experience had a significant positive effect on shared reality ($\beta = 0.160$, $p < 0.01$; $\beta = 0.204$, $p < 0.01$), supporting H1b and H1c. However, anthropomorphized appearance and conscious emotionality had an insignificant effect on shared reality ($\beta = -0.013$, $p > 0.05$; $\beta = 0.121$, $p > 0.05$). Thus, rejecting H1a and H1d.

To test the moderating effect of escapism on the relationship between virtual influencer anthropomorphism dimensions and shared reality, we

Table 3
Correlation Matrix.

	Mean	SD	α	AVE	CR	1	2	3	4	5	6	7	8	9	10	11	12	13	14
1. Appearance	3.46	1.13	0.88	0.71	0.88	0.84	0.144**	0.000	0.024	0.039	0.034	0.019							
2. Moral virtue	3.26	0.74	0.89	0.68	0.88	0.249**	0.83	0.276**	0.343**	0.168**	0.309**	0.365**							
3. Cognitive experience	2.74	1.4	0.86	0.68	0.86	0.123	0.365**	0.82	0.658**	0.065	0.310**	0.163**							
4. Conscious emotionality	2.45	1.14	0.95	0.86	0.94	0.144*	0.424**	0.700**	0.93	0.128	0.344**	0.276**							
5. Escapism	3.36	0.96	0.88	0.73	0.89	0.088	0.270**	0.180**	0.235**	0.85	0.416*	0.278**							
6. Shared reality	2.32	0.80	0.84	0.65	0.85	0.153*	0.394**	0.395**	0.425**	0.488**	0.81	0.483**							
7. Positive affect	3.80	0.60	0.83	0.61	0.85	0.140*	0.443**	0.266**	0.365**	0.367**	0.547**	0.79							
8. Check frequency	2.38	1.74	-	-	-	-0.021	0.199**	0.203**	0.183**	0.345**	0.357**	0.224							
9. F-Sex	-	-	-	-	-	0.118	-0.072	-0.239**	-0.154*	0.003	-0.136*	-0.044	-0.147*						
10. F-Age	33.6	9.1	-	-	-	-0.066	0.175*	0.220**	0.107	0.170*	0.061	0.058	0.248**						
11. VI-Female	-	-	-	-	-	0.372**	-0.005	-0.174*	-0.008	-0.031	-0.010	-0.072	-0.157*	-0.161*					
12. VI-Male	-	-	-	-	-	-0.270**	0.034	0.184*	0.067	0.072	0.026	0.048	0.144*	-0.461**	0.124				
13. VI-Other	-	-	-	-	-	-0.237**	-0.046	0.018	-0.092	-0.061	-0.024	0.052	0.051	-0.119	0.092	-0.835**			
14. Length of following	1.56	1.12	-	-	-	0.191**	0.072	-0.007	0.057	-0.032	0.115	0.055	0.081	0.052	-0.136*	0.140*	-0.100	-0.143*	-0.023

Note: **Correlation is significant at the 0.01 level. *Correlation is significant at the 0.05 level. The bold values on the diagonal are the square root of AVE. CMV-adjusted correlations are presented on upper diagonal with italics; original correlations are presented on lower diagonal.

created interaction terms by multiplying mean-centered values of each dimension of anthropomorphism and escapism. The results showed that escapism had a significant and positive direct effect on shared reality ($\beta = 0.400, p < 0.001$). The interaction of moral virtue and escapism had a positive effect on shared reality ($\beta = 0.129, p < 0.05$), supporting H2b (see Fig. 4), and other interaction terms did not have any effects on shared reality. Thus, H2a, H2c, and H2d were rejected although the interaction between conscious emotionality and escapism (H2d) was partially significant ($\beta = 0.149, p = 0.065$), hence it should be interpreted carefully. Regarding the control variables, only the followers' age had a direct and significant effect on check frequency ($\beta = 0.217, p < 0.001$). Table 4 provides a summary of the results.

of this second study are discussed in collaboration with the netnographic study to present the overall conclusion and implications.

6. Conclusion and implications

Study 1 revealed that Instagram users negotiate and construct meaning for VIs as human-like personalities and bodies, indicating high levels of anthropomorphism (Epley et al., 2007; Golossenko et al., 2020). As a result, consumers interact in accordance with their emotional desires and the physical attractiveness of the virtual influencer. However, Study 2 revealed that while moral and cognitive dimensions of anthropomorphism have a positive influence on perceived shared reality (H1b and H1c), appearance and conscious emotionality did not (H1a and H1d). Interestingly, the effect of appearance on shared reality was negative ($\beta = -0.013, t = -0.213$). These results indicate that rather than the physical appearance of the VIs, it is instead the cognitive features of VIs that are important factors that increase followers' perceptions of the reality shared with the virtual influencer. Our findings suggest the physical appearance of the VI and their perceived ability to feel emotions like remorse and guilt do not produce any personalized relational exchanges associated with meaningful engagement and shared reality (Salem et al., 2013).

Escapism had limited effect on strengthening the relationship between the dimensions of VI anthropomorphism and shared reality (H2) indicating that truly escaping into the fictional world of anthropomorphized VIs does not amplify closeness, fun, and pleasant interactions with a VI. Yet, it did strengthen the effect of anthropomorphic moral virtue on shared identity (H2b) revealing that when consumers have higher trust in the morals of the VI and have a higher tendency to escape their reality, they have stronger shared reality with the VI. It is important to note that the interaction effect of cognitive emotionality and escapism on shared reality was partially significant ($\beta = 0.149, p = 0.065$) showing followers' higher evaluation of VI's conscious emotionality and high level of escapism increases shared reality with a VI (see Fig. 5). Hence, strengthening the cognitive features of the VI is more effective and important for increasing shared reality especially when consumers have a higher desire to escape reality. Consequently, shared reality is important as this was shown to have a positive impact on followers' positive affect (H3) and checking frequency of VIs' pages (H4).

6.1. Theoretical contributions

Our study contributes to the existing literature on VI in two ways. First, our study is the first to explore the meaning consumers construct for VIs, which are an emerging category of social media influencers that have received very little attention to-date (Aw & Agrimhotri, 2024). People attach different meanings to things on social media and interact with these things based on the meanings they have for them (Lawless et al., 2022; Laor, 2022). Theoretically, we found that the synthesis of symbolic interactionism with anthropomorphism explains how comments and social exchanges on Instagram were a process of negotiation to understand the previously unknown reality of VIs. I.e., Fig. 2 and quotes from Negotiating Reality theme show that social media users

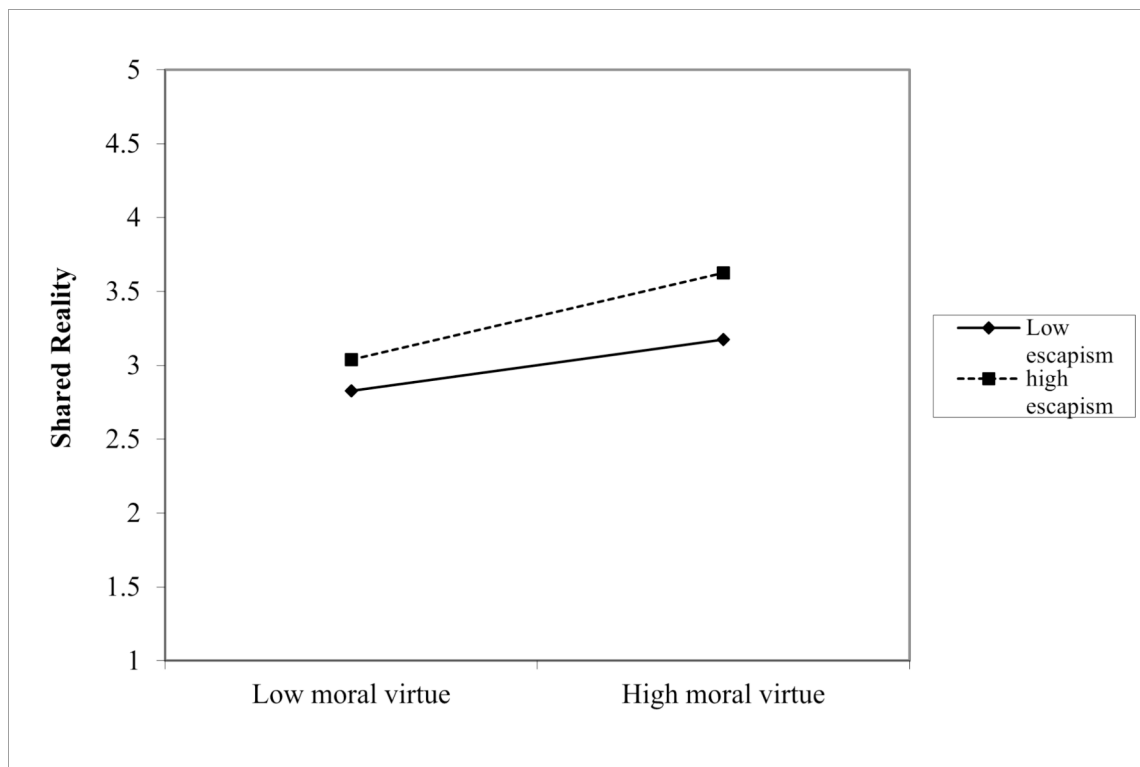


Fig. 4. Interaction Effect of Moral Virtue and Escapism on Shared Reality.

Table 4
Structural Model Results.

From	To	Coefficient	Standardized coefficient (b)	t	Hypothesis
Hypothesized direct path					
Appearance	Shared reality	-0.009	-0.013	-0.213	H1a Rejected
Moral virtue	Shared reality	0.174	0.160	2.61**	H1b Supported
Cognitive experience	Shared reality	0.158	0.204	2.62**	H1c Supported
Conscious emotionality	Shared reality	0.085	0.121	1.57	H1d Rejected
Shared reality	Positive affect	0.416	0.556	9.45***	H3 Supported
Shared reality	Checking frequency	0.232	0.305	4.02***	H4 Supported
Other direct effects					
Escapism	Shared Reality	0.333	0.400	7.27***	-
Positive affect	Checking frequency	0.030	0.029	0.39	-
Interaction effects					
Appearance x Escapism	Shared reality	0.039	0.050	0.91	H2a Rejected
Moral Virtue x Escapism	Shared reality	0.132	0.129	2.12*	H2b Supported
Cognitive experience x Escapism	Shared reality	-0.061	-0.074	-0.97	H2c Rejected
Conscious emotionality x Escapism	Shared reality	0.106	0.149	1.84 ⁺	H2d Rejected
Effects of control variables					
VI Female	Shared reality	-0.016	-0.008	-0.08	-
VI Male	Shared reality	-0.134	-0.060	-0.60	-
Length of following	Shared reality	0.083	0.117	2.18*	-
Follower gender	Shared reality	-0.164	-0.095	-1.57	-
Follower age	Shared reality	-0.007	-0.079	-1.42	-
VI Female	Shared reality	-0.218	-0.147	-1.37	-
VI Male	Positive affect	-0.092	-0.055	-0.52	-
Length of following	Positive affect	0.001	0.002	0.03	-
Follower gender	Positive affect	0.100	0.077	1.15	-
Follower age	Positive affect	0.001	0.014	0.24	-
VI Female	Checking frequency	-0.118	-0.078	-0.87	-
VI Male	Checking frequency	0.062	0.037	0.319	-
Length of following	Checking frequency	0.047	0.087	1.37	-
Follower gender	Checking frequency	-0.047	-0.035	-0.50	-
Follower age	Checking frequency	0.014	0.217	3.42***	-
$\chi^2 = 40.488, df = 18, \chi^2/df = 2.25. CFI = 0.978, TLI = 0.837, RMSEA = 0.078$					

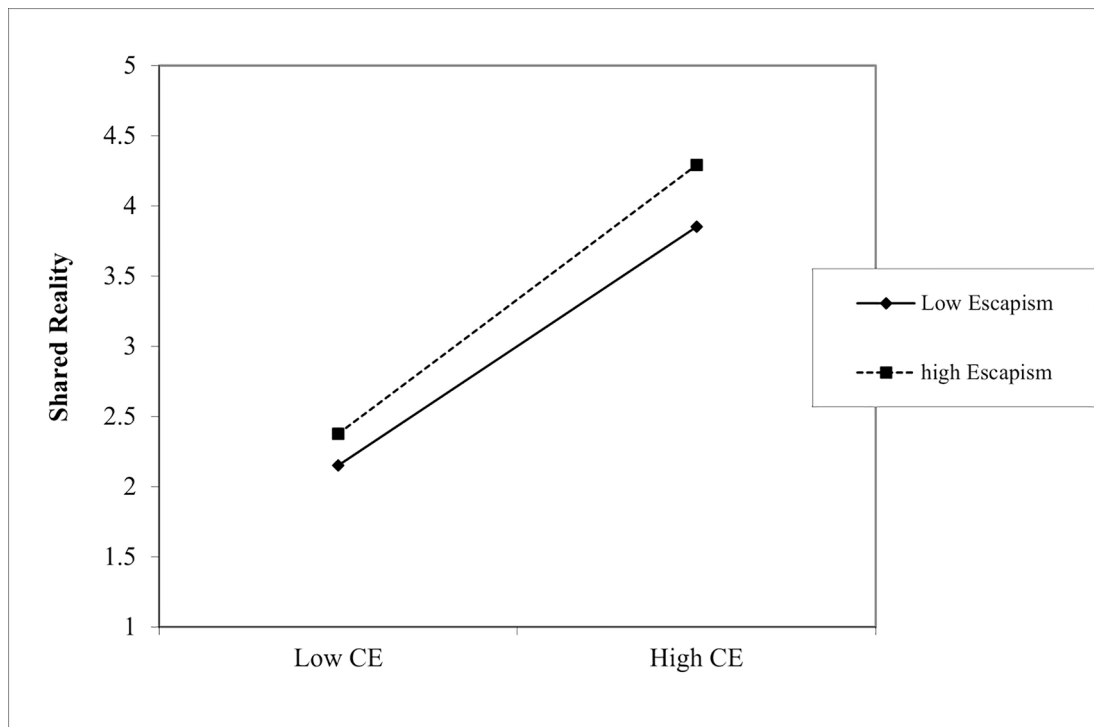


Fig. 5. Interaction Conscious Emotionality and Virtue and Escapism on Shared Reality.

would interact in the comment sections to ask questions and debate the anthropomorphic nature of VIs. Based on this constructed understanding, many commenters either dismissed VIs or declared their anthropomorphic feelings towards VIs which could range from romantic affection, objectifying personal beauty, and expressing disgust at their appearance. Thus, aligning with the tenets of symbolic interactionism, anthropomorphism is part of meaning construction for VIs and also influences commenters' social exchanges on Instagram.

Discriminatory comments were almost exclusively directed at the physical bodies of female VIs, indicating that commenters wished to shame the anthropomorphized body of female virtual influencers. Thus, despite the gender identity of the content creator being unknown, commenters are constructing meaning for VIs as anthropomorphic and gendered people, and these interpretations play a guiding role in the use of language within Instagram comment sections (Blumer, 1986). Our findings show the importance of the meaning commenters construct for the identity of a virtual influencer as H3 and H4 indicated that if followers perceive they share a similar reality and sense of similarity and closeness with the virtual influencer, this results in positive behavioral outcomes. This is of theoretical and ethical significance as such a virtual identity can be changed or constructed immediately to fit with the needs and desires of an audience to try and generate this sense of shared reality (Sands et al., 2022b).

Second, in contrast to studies that have emphasized the importance of the perceived attractiveness of traditional social media influencers (Farivar et al., 2022; Kim & Park 2023; Torres et al., 2019), and emphasized the importance of physical as well as cognitive anthropomorphism in enhancing consumers' perceptions and relationship with VIs (e.g., Dabrian et al., 2024; Kim et al., 2024), our findings show that followers found the appearance of VIs to be the least important anthropomorphic feature in generating a perceived sense of shared reality (H1a) since the effect is negative and insignificant. Instead, our results reveal the importance of the cognitive and moral features of VI anthropomorphism in generating a perceived shared reality associated with closeness, enjoyment, and commonality (Echterhoff et al., 2009; Salem et al., 2013). This psychological comfort and closeness are a positive outcome of the personalized anthropomorphic features of VIs as

it leads to positive affect and engagement amongst followers. Importantly, we contribute to the literature on shared reality (e.g., Rossignac-Milon et al., 2024) by illustrating that shared reality can form not just between humans (i.e., strangers or close partners) but also between humans and digital personas like VIs. Given that parasocial, close, and intimate relationships with a traditional influencer are imagined and perceived (Reinikainen et al., 2020) such affection directed at a VI may be no less 'real' or close to reciprocity than between a follower and an influencer with a physical presence (Sands et al., 2022a).

6.2. Managerial implications

Marketers should consider employing the use of VIs as our findings show that many Instagram users can create just as close, intimate, and loving relationships with the anthropomorphic image of a virtual influencer as is typical with a traditional influencer. Similar consumer outcomes between VIs and human influencers have also been suggested in previous studies (Belanche et al., 2024; Sands et al., 2022a).

Though the visual appearance of VIs promoted significant anthropomorphized engagement, our study also revealed that the appearance of VIs is the least important feature for generating shared reality. Thus, marketers should partner with/create VIs who are perceived to possess moral values and who appear to have the capacity to engage cognitively with their followers as this is shown to produce a personal sense of shared reality. This shared reality is important as it creates psychological closeness among those engaging with an unfamiliar entity (Echterhoff et al., 2009; Murtarelli et al., 2021; Salem et al., 2013). Further, we found that perceived shared reality with a virtual influencer was important for followers' positive affect and engagement with a virtual influencer's page. Thus, virtual influencer pages may try to generate a sense of intimacy with their followers by providing insights about the virtual influencer's personal life and interests to create this commonality and connection (Yan et al., 2024; Ye et al., 2021).

7. Limitations and further research

As with any research, this study comes with limitations that open

avenues for future research. First, cross-sectional data collection with a relatively small sample size could limit our contributions (Hair et al., 2010). Although we distributed our survey to 500 respondents who claimed to follow VIs, since the concept of VIs was relatively new when we collected the data many of the respondents were screened out due to providing invalid responses to questions asking them about the virtual influencer they follow (i.e., responding with the name of human influencers). Although the meaningful minimum sample size for SEM is suggested as $n = 200$ (Kline, 2016) and our model was not a complicated model, future studies could employ a longitudinal study or experimental studies with a larger sample size to ensure the causality as well as to avoid sampling errors (Kline, 2016).

Secondly, this paper only focused on one type of VI (i.e., CGI, human-like) in both studies. Although our research did not show a significant effect of VIs' appearance on shared reality, it is important to investigate what type of VI brands should create/collaborate with in the future as consumers may have different attitudes towards different types of VIs (a human-like, animation-like, brand created VI vs. third-party VIs and voice-only) (Yan et al., 2024). Finally, research on VIs is still emerging and there remains significant opportunity for greater theoretical exploration to provide further and more robust understanding for these phenomena.

CRedit authorship contribution statement

Jamie Thompson: Writing – original draft, Project administration, Methodology, Investigation, Formal analysis, Conceptualization. **Reika Igarashi:** Writing – original draft, Software, Methodology, Formal analysis, Conceptualization. **Agata Krowinska:** Writing – original draft, Formal analysis, Conceptualization. **Ashleigh Logan-McFarlane:** Writing – original draft, Formal analysis, Conceptualization.

Declaration of competing interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

References

- Anderson, J. C., & Gerbing, D. W. (1988). Structural equation modeling in practice: A review and recommended two-step approach. *Psychological bulletin*, *103*(3), 411–423.
- Argyris, Y. A., Wang, Z., Kim, Y., & Yin, Z. (2020). The effects of visual congruence on increasing consumers' brand engagement: An empirical investigation of influencer marketing on Instagram using deep-learning algorithms for automatic image classification. *Computers in Human Behavior*, *112*, Article 106443.
- Aw, E.-C.-X., & Agnihotri, R. (2024). Influencer marketing research: Review and future research agenda. *Journal of Marketing Theory and Practice*, *32*(4), 435–448.
- Aw, E. C., & Chuah, S. H. (2021). "Stop the unattainable ideal for an ordinary me!" fostering parasocial relationships with social media influencers: The role of self-discrepancy. *Journal of Business Research*, *132*, 146–157.
- Baboo, S., Nunkoo, R., & Kock, F. (2022). Social media attachment: Conceptualization and formative index construction. *Journal of Business Research*, *139*, 437–447.
- Bagozzi, R. P., & Yi, Y. (1988). On the evaluation of structural equation models. *Journal of the Academy of Marketing Science*, *16*(1), 74–94.
- Ballestar, M. T., Martín-Llaguno, M., & Sainz, J. (2022). An artificial intelligence analysis of climate-change influencers' marketing on Twitter. *Psychology & Marketing*, *39*(12), 2273–2283.
- BBC (2021). Social media influencers face relentless abuse, MPs are told. <https://www.bbc.co.uk/news/entertainment-arts-57823716>.
- Belanche, D., Casalo, L. V., & Flavián, M. (2024). *Human versus virtual influencers, a comparative study*, *173*, Article 114493.
- Blumer, H. (1986). *Symbolic Interactionism*. London: University of California Press.
- Breves, P., Amrehn, J., Heidenreich, A., Liebers, N., & Schramm, H. (2021). Blind trust? The importance and interplay of parasocial relationships and advertising disclosures in explaining influencers' persuasive effects on their followers. *International Journal of Advertising*, *40*(7), 1209–1229.
- Caplan, M. A., & Purser, G. (2019). Qualitative inquiry using social media: A field-tested example. *Qualitative Social Work*, *18*(3), 417–435.
- Canavan, B. (2021). Post-postmodern consumer authenticity, stantay you stay or sashay away? A netnography of RuPaul's Drag Race fans? *Marketing Theory*, *21*(2), 251–276.
- Dabiran, E., Farivar, S., Wang, F., & Grant, G. (2024). Virtually human: Anthropomorphism in virtual influencer marketing. *Journal of Retailing and Consumer Services*, *79*, Article 103797.
- Das, G., Wiener, H. J. D., & Kareklas, I. (2019). To emoji or not to emoji? Examining the influence of emoji on consumer reactions to advertising. *Journal of Business Research*, *96*, 147–156.
- Echterhoff, G., & Higgins, E. T. (2017). Creating shared reality in interpersonal and intergroup communication: The role of epistemic processes and their interplay. *European Review of Social Psychology*, *28*(1), 175–226.
- Echterhoff, G., Higgins, E. T., & Levine, J. M. (2009). Shared reality: Experiencing commonality with others' inner states about the world. *Perspectives on the Psychological Science*, *4*(5), 496–521.
- Epley, N., Akalis, S., Waytz, A., & Cacioppo, J. T. (2008). Creating social connection through inferential reproduction: Loneliness and perceived agency in gadgets, gods, and greyhounds. *Psychological Science*, *19*(2), 114–120.
- Epley, N., Waytz, A., & Cacioppo, J. T. (2007). On seeing human: A three-factor theory of anthropomorphism. *Psychological Review*, *114*(4), 864–886.
- Farivar, S., Wang, F., & Turel, O. (2022). Followers' problematic engagement with influencers on social media: An attachment theory perspective. *Computers in Human Behavior*, *133*, Article 107288.
- Fine, G. A., & Tavory, I. (2019). Interactionism in the twenty-first century: A letter on being-in-a-meaningful-world. *Symbolic Interaction*, *42*(3), 457–467.
- Fornell, C., & Larcker, D. F. (1981). Evaluating structural equation models with unobservable variables and measurement error. *Journal of Marketing Research*, *18*(1), 39–50.
- Franke, C., Groeppel-Klein, A., & Müller, K. (2023). Consumers' responses to virtual influencers as advertising endorsers: Novel and effective or uncanny and deceiving? *Journal of Advertising*, *52*(4), 523–539.
- Fujita, M., Harrigan, P., Soutar, G. N., Roy, S. K., & Roy, R. (2020). Enhancing member-institution relationships through social media: The role of other-user engagement behavior and similarity perceptions. *Journal of Business Research*, *121*, 642–654.
- Gao, W., Liu, Z., & Li, J. (2017). How does social presence influence SNS addiction? A belongingness theory perspective. *Computers in Human Behavior*, *77*, 347–355.
- Gerrath, M. H. E. E., Olya, H., Shah, Z., & Li, H. (2024). Virtual influencers and pro-environmental causes: The roles of message warmth and trust in experts. *Journal of Business Research*, *175*, Article 114520.
- Golossenko, A., Pillai, K. G., & Aroean, L. (2020). Seeing brands as humans: Development and validation of a brand anthropomorphism scale. *International Journal of Research in Marketing*, *37*(4), 737–755.
- Ha, L., Joa, C. Y., Gabay, L., & Kim, K. (2018). Does college students' social media use affect school e-mail avoidance and campus involvement? *Internet Research*, *28*(1), 213–231.
- Hair, J. F., Black, W. C., Babin, B. J., & Anderson, R. (2010). *Multivariate Data Analysis: A Global Perspective* (7th ed). New Jersey: Pearson Prentice Hall.
- Hall-Phillips, A., Park, J., Chung, T. L., Anaza, N. A., & Rathod, S. R. (2016). I (heart) social ventures: Identification and social media engagement. *Journal of Business Research*, *69*(2), 484–491.
- Han, M. C. (2021). The impact of anthropomorphism on consumers' purchase decision in chatbot commerce. *Journal of Internet Commerce*, *20*(1), 46–65.
- Igarashi, R., Bhoumik, K., & Thompson, J. (2024). Investigating the effectiveness of virtual influencers in prosocial marketing. *Psychology & Marketing*, *41*(9).
- Jiang, Y., & Punj, G. N. (2010). The effects of attribute concreteness and prominence on selective processing, choice, and search experience. *Journal of the Academy of Marketing Science*, *38*(4), 471–489.
- Influencer Marketing Hub (2024). Artificial Intelligence (AI) Marketing Benchmark Report: 2024. <https://influencermarketinghub.com/ai-marketing-benchmark-report/>.
- Kim, M., & Baek, T. H. (2024). Are virtual influencers friends or foes? Uncovering the perceived creepiness and authenticity of virtual influencers in social media marketing in the United States. *International Journal of Human-Computer Interaction*, *40*(18), 5042–5055.
- Kim, I., Ki, C.-W., Lee, H., & Kim, Y.-K. (2024). Virtual influencer marketing: Evaluating the influence of virtual influencers' form realism and behavioral realism on consumer ambivalence and marketing performance. *Journal of Business Research*, *176*, Article 114611.
- Kim, H., & Park, M. (2023). Virtual influencers' attractiveness effect on purchase intention: A moderated mediation model of the Product–Endorser fit with the brand. *Computers in Human Behavior*, *143*.
- Kline, R. B. (2016). *Principles and Practice of Structural Equation Modeling* (4th ed). New York: Guildford Press.
- Koles, B., Audrezet, A., Moulard, J. G., Ameen, N., & McKenna, B. (2024). The authentic virtual influencer: Authenticity manifestations in the metaverse. *Journal of Business Research*, *170*, Article 114325.
- Kozinets, R. V. (2002). The field behind the screen: Using netnography for marketing research in online communities. *Journal of Marketing Research*, *39*(1), 61–72.
- Kozinets, R. V. (2010). *Netnography: Doing ethnographic research online*. Sage publications.
- Kozinets, R. V., Scaraboto, D., & Parmentier, M.-A. (2018). Evolving netnography: How brand auto-netnography, a netnographic sensibility, and more-than-human netnography can transform your research. *Journal of Marketing Management*, *34*, 231–242.
- Laor, T. (2022). My social network: Group differences in frequency of use, active use, and interactive use on Facebook. *Instagram and Twitter. Technology in Society*, *68*, Article 101922.
- Lawless, M. T., Hunter, S. C., de Plaza, M., Archibald, M. M., & Kitson, A. L. (2022). "You are by no means alone": A netnographic study of self-care support in an online community for older adults. *Qualitative Health Research*, *32*(13), 1935–1951.

- Lee, C. S., & Ma, L. (2012). News sharing in social media: The effect of gratifications and prior experience. *Computers in Human Behavior*, 28(2), 331–339.
- Lee, Y., Cho, S., Sun, R., & Li, C. (2021). Public responses to employee posts on social media: The effects of message valence, message content, and employer reputation. *Internet Research*, 31(3), 1040–1060.
- Leikas, S., Ilmarinen, V. J., Verkasalo, M., Vartiainen, H. L., & Lönnqvist, J. E. (2018). Relationship satisfaction and similarity of personality traits, personal values, and attitudes. *Personality and Individual Differences*, 123, 191–198.
- Lindell, M. K., & Whitney, D. J. (2001). Accounting for common method variance in cross-sectional research designs. *Journal of Applied Psychology*, 86(1), 114–121.
- Loureiro, S. M. C., Guerreiro, J., & Japutra, A. (2021). How escapism leads to behavioral intention in a virtual reality store with background music? *Journal of Business Research*, 134, 288–300.
- MacCallum, R. C., Browne, M. W., & Sugawara, H. M. (1996). Power analysis and determination of sample size for covariance structure modeling. *Psychological methods*, 1(2), 130.
- Maru, C., & Dey, D. K. (2024). Consumer escapism: A systematic review. *Journal of Marketing Theory and Practice*, 1–23.
- McKenna, B., Myers, M. D., & Newman, M. (2017). Social media in qualitative research: Challenges and recommendations. *Information and Organization*, 27, 87–99.
- Milgram, P., & Kishino, F. (1994). A taxonomy of mixed reality visual displays. *IEICE TRANSACTIONS on Information and Systems*, 77(12), 1321–1329.
- Morse, J. M. (2015). Data were saturated. . . . *Qualitative Health Research*, 25(5), 587–588.
- Mouritzen, S. L. T., Penttinen, V., & Pedersen, S. (2024). Virtual influencer marketing: The good, the bad and the unreal. *European Journal of Marketing*, 58(2), 410–440.
- Muniz, F., Stewart, K., & Magalhães, L. (2023). Are they humans or are they robots? The effect of virtual influencer disclosure on brand trust. *Journal of Consumer Behaviour*, 23(3), 1234–1250.
- Murtarelli, G., Gregory, A., & Romenti, S. (2021). A conversation-based perspective for shaping ethical human-machine interactions: The particular challenge of chatbots. *Journal of Business Research*, 129, 927–935.
- Podsakoff, P. M., MacKenzie, S. B., Lee, J. Y., & Podsakoff, N. P. (2003). Common method biases in behavioral research: A critical review of the literature and recommended remedies. *Journal of Applied Psychology*, 88(5), 879–903.
- Przybylinski, E., & Andersen, S. M. (2015). Systems of meaning and transference: Implicit significant-other activation evokes shared reality. *Journal of Personality and Social Psychology*, 109(4), 636.
- Reich, B. J., & Pittman, M. (2020). An appeal to intimacy: Consumer response to platform-appeal fit on media. *Journal of Consumer Psychology*, 30(4), 660–670.
- Reinikainen, H., Munnukka, J., Maity, D., & Luoma-aho, V. (2020). ‘You really are a great big sister’ – parasocial relationships, credibility, and the moderating role of audience comments in influencer marketing. *Journal of Marketing Management*, 36(3–4), 279–298.
- Rossignac-Milon, M., Bolger, N., Zee, K. S., Boothby, E. J., & Higgins, E. T. (2021). Merged minds: Generalized shared reality in dyadic relationships. *J Pers Soc Psychol*, 120(4), 882–911.
- Rossignac-Milon, M., Pillemer, J., Bailey, E. R., Jr, B. H., & C. & Iyengar, S. S. (2024). Just be real with me: Perceived partner authenticity promotes relationship initiation via shared reality. *Organizational Behavior and Human Decision Processes*, 180, Article 104306.
- Salem, M., Eyssel, F., Rohlfing, K., Kopp, S., & Joubin, F. (2013). To err is human(-like): Effects of robot gesture on perceived anthropomorphism and likeability. *International Journal of Social Robotics*, 5, 313–323.
- Sands, S., Campbell, C. L., Plangger, K., & Ferraro, C. (2022a). Unreal influence: Leveraging AI in influencer marketing. *European Journal of Marketing*, 56(6), 1721–1747.
- Sands, S., Ferraro, C., Demars, V., & Chandler, G. (2022b). False idols: Unpacking the opportunities and challenges of falsity in the context of virtual influencers. *Business Horizons*, 65(6), 777–788.
- Schouten, A. P., Janssen, L., & Verspaget, M. (2020). Celebrity vs. influencer endorsements in advertising: The role of identification, credibility, and product-endorser fit. *International Journal of Advertising*, 39(2), 258–281.
- Scott, S. (2018). A sociology of nothing: Understanding the unmarked. *Sociology*, 52(1), 3–19.
- Smith, L. W., & Rose, R. L. (2020). Service with a smiley face: Emotional contagion in digitally mediated relationships. *International Journal of Research in Marketing*, 37, 301–319.
- Stathakopoulos, V., Kottikas, K. G., Painesis, G., Theodorakis, I. G., & Kottika, E. (2022). Why shape a market? Empirical evidence on the prominent firm-level and market-level outcomes of market-driving strategy. *Journal of Business Research*, 139, 1240–1254.
- Stein, J.-P., Breves, P. L., & Anders, N. (2022). Parasocial interactions with real and virtual influencers: The role of perceived similarity and human-likeness. *New Media & Society*, 26(6), 3433–3453.
- Thomas, V. L., & Fowler, K. (2021). Close encounters of the AI kind: Use of AI influencers as brand endorsers. *Journal of Advertising*, 50(1), 11–25.
- Thompson, J. (2022). A guide to abductive thematic analysis. *The Qualitative Report*, 27(5), 1410–1421.
- Thompson, J., & Taheri, B. (2020). Capital deployment and exchange in volunteer tourism. *Annals of Tourism Research*, 81, Article 102848.
- Toh, W. X., Ng, W. Q., Yang, H., & Yang, S. (2021). Disentangling the effects of smartphone screen time, checking frequency, and problematic use on executive function: A structural equation modelling analysis. *Current Psychology*, 42, 4225–4242.
- Torres, P., Augusto, M., & Matos, M. (2019). Antecedents and outcomes of digital influencer endorsement: An exploratory study. *Psychology & Marketing*, 36, 1267–1276.
- Westbrook, R. A. (1987). Product/consumption-based affective responses and post-purchase processes. *Journal of Marketing Research*, 24(3), 258–270.
- Xue, H., Newman, J. I., & Du, J. (2019). Narratives, identity and community in esports. *Leisure Studies*, 38(6), 845–861.
- Yan, J., Xia, S., Jiang, A., & Lin, Z. (2024). The effect of different types of virtual influencers on consumers’ emotional attachment. *Journal of Business Research*, 177, Article 114646.
- Ye, G., Hudders, L., De Jans, S., & De Veirman, M. (2021). The value of influencer marketing for businesses: A bibliometric analysis and managerial implications. *Journal of Advertising*, 50(2), 160–178.
- Yu, J., Dickinger, A., So, K. K. F., & Egger, R. (2024). Artificial intelligence-generated virtual influencer: Examining the effects of emotional display on user engagement. *Journal of Retailing and Consumer Services*, 76, Article 103560.
- Yuan, C. L., Kim, J., & Kim, S. J. (2016). Parasocial relationship effects on customer equity in the social media context. *Journal of Business Research*, 69, 3795–3803.
- Zhou, X., Yan, X., & Jiang, Y. (2024). Making sense? The sensory-specific nature of virtual influencer effectiveness. *Journal of Marketing*, 88(4), 84–106.

Jamie Thompson, Dr Jamie Thompson is an Associate Professor in marketing at Edinburgh Napier University. His research is on the impact of new and innovative technology on consumer behaviour with a particular focus on consumer wellbeing in virtual environments and online gaming.

Reika Igarashi, Dr Reika Igarashi is a Lecturer in marketing at Adam Smith Business School, University of Glasgow and has a PhD in Marketing from the Leeds University Business School. Her research interests include work engagement, technology-related stress (consumers and sales force), burnout in workplaces and sales force management.

Agata Krowinska, Dr Agata Krowinska is a Lecturer in digital marketing at Edinburgh Napier University. Her research interests focus on digital consumer engagement behaviours and content marketing.

Ashleigh Logan-McFarlane, Dr Ashleigh McFarlane is a Lecturer in marketing at Edinburgh Napier University. Her expertise in digital, ethnographic methods reveals how emerging behaviours in digital spaces are shaping marketplace behaviours. Her research focuses on influencers, market dynamics, labour, fashion marketing.