How Virtuous are Virtual Influencers? – A Qualitative Analysis of Virtual Actors' Virtues on Instagram

Lennart Hofeditz
University of Duisburg-Essen
lennart.hofeditz@uni-due.de

Lukas Erle
University of Duisburg-Essen
lukas.erle@uni-due.de

Lara Timm
University of Duisburg-Essen
lara.timm@uni-due.de

Milad Mirbabaie
Paderborn University
milad.mirbabaie@uni-paderborn.de

Abstract

Recently, virtual influencers (VIs) have become a more frequent alternative to human influencers (HIs). VIs can be described as non-human agents who behave in a human-like pattern. Big enterprises such as Prada, Porsche, Samsung, or Ikea have already collaborated with VIs in the past. Even though it should be clear to users that VIs cannot practice values and virtues in the real world, VIs seem to express certain virtues. This research paper focuses on identifying virtues conveyed by VIs and the effect of expressing virtues on follower engagement by conducting a qualitative content analysis of social media posts. Furthermore, we checked on VIs being abused by companies to convey a more favorable image. Our findings suggest that conveying certain virtues seems to have a positive effect on the engagement. In addition, some VIs were used by companies for virtue signaling without being noticed by their followers.

Keywords: Virtual influencers, virtues, influencer marketing, social media, virtue signaling

1. Introduction

Influencers use social media to promote products, brands, or represent certain opinions in order to win over their followers or steer them in a certain direction (Kádeková & Holienčinová, 2018; Ryan & Jones, 2009). However, influencers do not necessarily have to be real people. For several years now, there has been an increasing emergence of virtual influencers (VIs), who are computer-generated avatars controlled by companies pursuing a specific goal on social media (Arsenyan & Mirowska, 2021). VIs pose lower risks to the public image of companies because they are easier to control and their design is more adaptable (Moustakas et al., 2020). Previous research stated that authenticity and transparency might be important values for human influencers (HIs), but they do not seem to be equally as important for VIs (Robinson, 2020). This is an indication that VIs express different values from those conveyed by HIs. One could think that it would be desirable that VIs mainly show values of good character – commonly referred to as virtues, as suggested by Seligman (2004). However, Vogel et al. (2014) have shown that the use of Instagram can weaken self-esteem if there are upward comparison tendencies. With VIs, this effect could be even stronger as VIs are not bound by limitations of an HI. A too positive expression of virtues displayed by VIs could create upward comparison tendencies. Although previous research already considered different classifications (Batista da Silva Oliveira & Chimenti, 2021), little is known about values and virtues presented by VIs. However, these could be a first indication to better understand the impact of VIs on individuals and society.

Overall, there is a clear deficit in research regarding virtues in the context of social media. This deficit leads to a blurring of moral values (Bowen, 2013), which in turn can harbor another danger: Virtue signaling (VS), which is defined as displaying one's moral values and convictions to the outside world with the aim to convince others of one's moral integrity (Tosi & Warmke, 2016). This can be a problem, as intentionally misleading values and moral intentions can blur actual intentions and weaken trustworthiness and authenticity, which are the most commonly studied characteristics of VIs (Batista da Silva Oliveira & Chimenti, 2021). As VIs are no real human beings, the question arises whether every expressed virtue should be considered VS. However, there is a way to examine the authenticity of virtues in VIs: The parent companies and advertising partners can both be checked for their values and actions. This way, a comparison of the virtues conveyed by VIs with the associated brands and companies can be carried out. To examine virtues expressed by VIs, we pose the following research question (RQ):

HｷCSS

RQ1: Which virtues do virtual influencers convey on Instagram and why?

The upward comparison tendencies of followers by too virtuous values expressed by VIs could also lead to a reduction in the number of followers and thus have a negative impact on the company promoting the product. It is therefore important to examine the impact of these virtues on the followers, in order to optimize virtues for the marketing purposes that the VIs were created or hired for (Stapleton et al., 2017). To investigate this impact, we selected engagement as the main dimension of measurement. Engagement can be described as an indication of popularity, trustworthiness and reliability (Batista da Silva Oliveira & Chimenti, 2021). To examine the effect of expressed virtues by VIs on follower engagement, we raise the following second research question:

RQ2: How do virtues conveyed by virtual influencers affect their followers' engagement?

To answer these research questions, we have analyzed 3729 Instagram posts (images and texts) of ten popular VIs and conducted a qualitative content analysis according to Mayring (2015). We deductively considered the virtue framework proposed by Crossan et al. (2013) and compared identified VI virtues with virtues of the VIs' advertisement partners. Our research contributes to e-commerce and marketing research by offering theoretical and practical implications of conveying virtues via VIs.

2. Literature Background

The influencer market has grown enormously in the recent decade and an increasing number of enterprises is cooperating with influencers to expand their reach and popularity. Extensive studies have estimated that brands will invest 15 billion US Dollars in influencer marketing in 2022 (Xie-Carson et al., 2021). Influencers can be defined as people who have social power and affect the habits and thoughts of others. This can happen through spoken and written words, but also through behavior (Robinson, 2020). They have a large number of supporters - named followers - which depend on their opinion regarding fashion, art or lifestyle (Wang et al., 2021).

The research of Freberg et al. (2011) focuses explicitly on social media influencers who have an impact on others through blogs, tweets and social media. VIs share many of these characteristics with their human counterparts, but they also have some additional, unique characteristics: They are embodied virtual agents with digital avatars, which makes them seem tangible and realistic (Arsenyan & Mirowska, 2021; Tan & Liew, 2020). Furthermore, VIs can be designed using both CGI and AI (Moustakas et al., 2020). In contrast to social bots (Stieglitz et al., 2022) or automated news accounts (Hofeditz et al., 2021), they are not automated but manually controlled by humans and represent a certain character with corresponding behavioral patterns (Arsenyan & Mirowska, 2021; Najari et al., 2021). A more comprehensive overview of the different virtual entities can be found in Table 1 below:

Table 1. Description of virtual entities

	Definition
VI	"agents augmented with digital avatars, designed to look human" (Arsenyan & Mirowska, 2021, p.2), mostly controlled by humans
CGI Influencer	Subcategory of VIs, which are computer-generated individuals who have real human traits, characteristics and personalities (Moustakas et al., 2020; Sobande, 2021; Xie-Carson et al., 2021)
AI Influencer	Subcategory of VIs, which are based on algorithms and machine learning in order to perform like a real person (Kumar et al., 2019; Moustakas et al., 2020)
Virtual Avatar	Images of persons, which are entirely controlled by the users (von der Pütten et al., 2010)
Social Bot	"a computer-based algorithm that automatically controls a social media account, produces content, and potentially interacts with human users on social media trying to emulate human behavior" (Najari et al., 2021, p.1)

As existing definitions of VIs slightly differ, we have combined multiple sources into the following, summarizing definition: VIs are non-real characters (human-like or non-human) designed for either marketing purposes or to simply create engagement on social media. They have inherent social power to shape the behavior of others through their own words and actions. Moreover, VIs can be categorized not only by the nature of their construction, but also by their

appearance; thus, one can identify VIs, which are either humanlike or cartoonlike (Xie-Carson et al., 2021).

For companies and brands, VIs are especially important, because people have a greater trust in unique, human-like influencers conveying values and virtues (Batista da Silva Oliveira & Chimenti, 2021). One of the most significant advantages for companies is that VIs are not real people with a free will, meaning that publicity risks can be avoided (Xie-Carson et al., 2021). For example, VIs are less likely to be involved in scandals as enterprises have a much greater control over their content and presentation (Arsenyan & Mirowska, 2021; Moustakas et al., 2020). Beyond that, "unlike HIs, where their personal life choices may affect the perception of the brand they promote, VIs are ageless human robots who do not have an 'offline life' which could negatively affect their 'online persona'" (Moustakas et al., 2020, p.2). For cooperating brands it is important that influencers are credible, attractive, and trustworthy to create a higher level of engagement consisting of metrics like comments, interactions, or likes (Batista da Silva Oliveira & Chimenti, 2021; Djafarova & Rushworth, 2017). Engagement can improve follower bonding and generates a higher coverage for advertised products. VIs further generate their influence through the attractiveness stereotype, their human likeness, and audio-visual effects (Faddoul & Chatterjee, 2020; Khan & Sutcliffe, 2014). To create unique characters, VIs are equipped with their own personality traits which are often expressed by values and virtues, such as solidarity with the black lives matter movement (Hofeditz et al., 2022).

3. Theoretical Background

Virtues are ''acquired human qualities, the excellences of character, which enable a person to achieve the good life'' (Mintz 1996, p. 827) and are understood as intrinsic qualities. Peterson and Seligman (2004) deduce from the main doctrines of virtues according to Aristotle and Plato that the fundamental virtues applied in historical literature also fit the description of a good character. These virtues are Wisdom, Courage, Temperance, Justice, Transcendence, and Humanity. Aristotle further describes a virtue as a moral quality that is influenced by an individual's actions (Aristotle, n.d.). The core concept of his elaboration aims at the selection of a decision that lies between the two extremes of a virtue – deficiency and excess. Virtues are characteristics that usually evoke delight or sorrow in the observer (Tasset,

2019). For example, for *Humanity*, possible manifestations of the two extremes are: *harsh/cruel* on the excess side and *obsequious* on the deficiency side, with the virtous mean being *kindness*. Thusly, virtues describe virtuous qualities that distinguish a character, and they are shaped by personal decisions and made visible to the rest of the world. These qualities of virtues were summarized in a framework for ethical decision making by Crossan et al. (2013).

On social media, virtues can be amplified by portraying an idealized self (Wallace et al., 2020). However, not only good values are conveyed on social media: A popular example for non-virtuous behavior is popular TikTok influencer Andrew Tate, who has recently been banned by the platform for promoting sexist values to a large audience (Cooper, 2022). In addition to this, the phenomenon of VS can occur: According to Tosi and Warmke (2016), VS is an active contribution to moral discourse with the intention of convincing others of one's own moral integrity. VS can also be used with the intent to mislead, when a virtue or virtuous image is intentionally created in a dishonest manner to signal an image that is different from reality (Levy, 2021). An example for dishonest VS would be falsely pretending to be concerned about environmental disasters in order to increase one's own moral defensibility and social acceptance.

As VIs are no real humans and virtues are based on intrinsic attitudes, they cannot really be virtuous. However, they express certain values and virtues on their social media channels which may be an indication for VS to promote products of partnering brands. As this would be an ethical issue and little is known about the values and virtues of VIs, we further examined VIs' social media posts and compared it with values of partnering brands.

4. Research Design

In order to examine virtues conveyed by VIs on social media, we conducted a qualitative content analysis (Mayring, 2015) on popular VIs. Furthermore, we considered the engagement for posts where they expressed certain values. Lastly, we compared these virtues with values of companies partnering with the VIs.

4.1 Choice of Influencers

Firstly, we selected the most engaging VIs as those had a high reach and multiple partnerships with brands

and companies. This process of selecting suitable VIs is summarized in Figure 1.
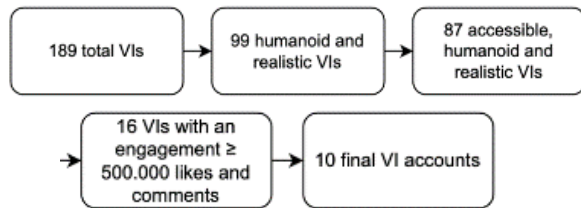
Figure 1. VI selection process

Because the present research aims to draw connections between HIs and VIs, choosing comparable VIs is sensible. These humanoid VIs should furthermore be realistic in their appearance. The most comprehensive and complete list of VIs is offered by the website VirtualHumans.org (2021). Out of 189 total VIs listed on their database, a total of 99 accounts featured realistic and humanoid characters. Not all accounts were public which led to twelve VIs having to be excluded.

All VIs were then compared to each other with regards to their posts' overall engagement. Follower counts were disregarded as they might be inflated by inactive or fake accounts (Instasize, 2021; Logan, 2018). Furthermore, our second research question directly addresses engagement, further strengthening the importance of this metric. The accounts with the largest engagement were further checked for whether they used image captions at all and whether these captions were in English. This parameter eliminated four VI accounts who either did not use captions or used captions in another language. Another account was excluded from the analysis as it was transformed into a company blog for a fashion retailer, featuring many normal humans. A sixth account was also excluded for repeatedly posting surreal images and seldomly featuring the VI itself.

Adapted from Alibakhshi and Srivastava (2022), we measured the overall engagement by combining the total number of likes and comments. Influencers with a total engagement of more than 500.000 likes and comments can be defined as mega- and macro-influencers with the biggest reach and influence (mediakix, 2021). Therefore, all VI accounts with a total engagement above this threshold were considered for the final analyses. This led to a total of ten VIs. These are (in order of their total engagement, highest to lowest): Miquela Sousa (@lilmiquela), Imma (@imma.gram), Rozy (@rozy.gram), Leya Love (@leyalovenature), Zinn (@plusticboy), Ion Göttlich (@iongottlich),

Blawko (@blawko22), Shudu (@shudu.gram), Binxie (@itsbinxie), and Bermuda (@bermudaisbae).

4.2 Codebook and Content Analysis

As this paper aims to examine which virtues are portrayed and communicated by VIs, we conducted a content analysis according to Mayring (2015). We decided to use a blend of both inductive and deductive content analysis steps: First we defined categories and keywords by building on Crossan et al. (2013) and considering similar literature. The VIs' posts were also examined regarding additional keywords and categories.

To properly and reliably code the content extracted from the VIs' Instagram profiles, we developed a codebook containing keywords and categories. As a foundation for the categories we used the framework of Crossan et al. (2013) as a basis. The different expressions of each category provided an initial collection of possible keywords.: Each virtue contains a set of three to four words describing the Deficiency, Mean and Excess. An example would be the virtue Courage, offering the keywords *cowardice, laziness* and *inauthenticity* for its Deficiency expression, the words *bravery, persistence,* and *integrity* for its Mean expression and finally the words *recklessness, zealot* and *righteousness* for its Excess expression. Some words were seldomly used in the modern language used by influencers on social media (Eisenstein et al., 2014). To counteract this circumstance, we used the dictionary database Thesaurus, and added suitable synonyms to the codebook, which were used more frequently. In some cases, we further decided to add sensible additional words that describe the literature-derived keywords in more detail. An example for this would be the keyword *creativity* from the virtue Wisdom: When influencers talk about their creative activities, they rarely use the word "creativity" itself, but rather talk about the exact activity being part of creativity. Hence, we added activities like singing or dancing as keywords, which in turn represent the keyword creativity. To allow the lexical search to identify all posts belonging to a category, some words have been stemmed: For example, the keyword *Creativity* itself would only identify posts containing this exact wording. Instead, we used the keyword *creat**, which is able to identify more words like *Creativity*, *Create*, and more.

A further important step in creating the codebook included the creation of a seventh coding category, which was named Brand Partnership and aimed at

coding posts that were sponsored or paid for by any brand. The keywords for this category were derived from a report from the British Advertising Standards Authority (2019). These keywords were again stemmed and extended by the words story and bio, as per experience sponsorships can often be identified by influencers linking brands or products in either their Instagram page bio or their timed stories. Table 2 is an excerpt of our codebook, offering a collection of example words per category.

Table 2. Codebook excerpt

Wisdom	Courage	Humanity
creat* (creativity)	protest*	queer*
curious* (curiosity)	riot*	tolera* (tolerance)
learn* (learning)	authent* (authenticity)	free* (freedom)

To further analyze the posts, we added associated emoticons. For instance, the word *free* is linked to emoticons like 🕊, 🉑, or ✌. This codebook was then tested via an intercoder reliability analysis to ensure all coders would apply codes the same way. The sample was extracted by setting a random time frame of three months and included 250 individual posts. These posts were coded according to the codebook. In the end, 969 codes were assigned by four coders, with some posts being assigned to multiple categories. This resulted in a Fleiss Kappa of $\kappa = .994$ (Fleiss & Cohen, 1973).

4.3 Analysis Tools and Steps

We selected Instagram as a suitable social media platform because it is one of the platforms with the most active user bases for both VIs and content marketing and telling stories and creating personalities works best with pictures (Faßmann & Moss, 2016). Advertising on Instagram increases followers' willingness to purchase, enabling the platform to combine marketing with IS (Qiu et al., 2021). Finally, image-based social media networks generally serve more diverse purposes to their users than simple text-based networks like Twitter (Teo et al., 2019). However, Instagram does not allow a direct export of post and account data. Therefore we used the social media analytics tool Fanpage Karma[1]. The ten VIs were added to a dashboard to allow an overview of

all posts over a set time period which has been set from November 1st, 2011 (the earliest accessible date) to the day the analysis was started (November 30th, 2021). This resulted in a total of 3729 posts across all ten VIs. For further analysis and coding of these posts, the tool MaxQDA[2] was used. Firstly, exported data was uploaded into the tool. Secondly, a lexical search for the keywords was conducted to check all posts for these keywords and remove posts that featured only parts of the keywords or used them in a different context. Finally, these keywords were auto coded by matching the keywords with the respective category code label we had defined beforehand. To explore possible new virtues, a word cloud of the most frequent words was created. If these words matched one of the already existing categories but had not been included in the codebook yet, it was added to the respective category. Alternatively, if a word did not match any of the existing categories, it was noted down and later clustered and grouped into new categories by considering the literature mentioned in the previous sections. Finally, the new categories were added as codes to MaxQDA and the posts were auto-coded again.

While MaxQDA only supports the semi-automated coding of caption as part of its text processing capabilities, the coding of images was done manually. The image labeling was done by checking the posts for the visual representation of the keywords. For example, if the post included a religious sign like a Star of David, it was sorted into the category *Transcendence* as it represents the keywords *faith* and *religion*. As another example, if a picture showed the VI meeting up with friends, the picture was sorted into the category *Humanity*, as it showed a visual representation of the keywords *friends* and *togetherness*. These visual representations were noted down in a spreadsheet containing the individual post, the keywords that were identified, and the visual representation.

Finally, the combination of virtues conveyed – both visually and in the captions – provided information about which virtues the VIs convey. Adressing the second research question, after having conducted all steps mentioned above, the average and peak engagement metrics of all VIs were measured using MaxQDA. The average engagement of a VI's posts matching our categories was then compared against that VI's average engagement and the average engagement of posts that did not match any category. This analysis was conducted for each VI individually and for all VIs

[1] https://www.fanpagekarma.com/de

[2] https://www.maxqda.de

together separately. The VI with the fewest total posts was Shudu with just 99 posts in total. In order to be able to compare a similar number of posts for each VI, we settled on comparing the most recent 100 posts of each VI, not least to be able to calculate percentages more easily.

5. Results

Each main virtue category of Crossan et al. (2013) was found in the analysis of the ten VIs' posts. Different frequencies resulted for the individual virtues[3]. Virtues related to the perception of nature, *Humanity* and spirituality were most frequently used, whereas virtues such as *Courage* or *Justice* were rarely represented. The virtues mainly conveyed by VIs are *Humanity, Wisdom, Transcendence, Temperance* and *Courage*. These virtues were often displayed through posts about interpersonal relationships like meeting friends or interacting with pets, posts about nature and environment, artistic outlets and spiritual topics, as well as openly talking about own emotions – both positive and negative ones. Most importantly, the assessment of the VIs' posts did not result in any additional, new virtues.

To check how the conveyed virtues – if at all – have an influence on the followers' engagement, the last 100 posts of each influencer were analyzed. First, the average engagement of each influencer was calculated from the existing posts. The posts were then divided into three categories: Posts that conveyed at least one virtue, posts that exceeded the average individual engagement of the VI's profile, and the combination of both. More than 80% of the posts with a higher-than-average engagement conveyed at least one virtue. From this we deduce that posts in which virtues are represented generate a higher level of engagement than posts in which no virtues are conveyed.

Furthermore, we considered all posts coded as Brand Partnership that also conveyed a virtue to analyze whether these virtues aligned with what the advertisement partners stand for, or whether VS might have occurred. To this end, we first listed all companies the VI had partnered with over the course of their last 100 posts and noted which individual virtues the sponsored posts conveyed. We then systematically searched for the company name in combination with keywords such as "controversy" and "scandal", as well as researching information regarding the company

itself. This led to news articles either condemning or praising certain actions or comments by the company in the past, which we used to decide whether the results contradicted with any of the virtues conveyed by the VIs' posts. Information given by companies themselves – for example as part of statements or product descriptions – also helped with this assessment, as claims of sustainability or good worker conditions could be easily researched by consulting independent sources. When conducting this examination of companies' virtues, it was imperative to only focus on post-specific virtues: For example, if a company was involved in a sexism scandal, yet none of the sponsored posts that company had with a VI conveyed *Humanity*, this scandal would not be considered as VS.

A total of 64 companies had partnered with the chosen VIs. One positive example in which a post's virtues and the corresponding company's virtues align can be found in the partnership between the VI Rozy and the brand Maison Margiela Fragrances: Rozy's post conveys the virtues *Temperance*, *Humanity* and *Courage*. These virtues align well with the fact that the brand offers many different unisex fragrances and its fashion label – Maison Margiela – has been praised for offering genderless clothing collections (Lim, 2021). In contrast, an example for dishonest VS was found in sponsored posts of the VI Shudu and the jewelry brand Tiffany & Co. The posts by Shudu, in which she can be seen modelling with diamonds provided by Tiffany & Co., convey the virtues *Transcendence*, *Wisdom* and – most importantly – *Humanity*. In contrast to this last virtue, Tiffany & Co. has repeatedly been accused of using so called blood diamonds for their jewelry. These diamonds are often unethically sourced or "originate from mines that employ slave labor systems" (Osmond, 2021, para. 4). These sponsored posts can therefore be seen as malicious VS. A notable example outside of the norm is the partnership between the VI Shudu and the Italian fashion label Ferragamo. In this case, Shudu's posts modelling for this brand conveyed the virtues *Transcendence* and *Wisdom*. Important for our analysis however was the fact that Shudu is a model of color and shortly before the partnership between her and Ferragamo, the brand was involved in a racism scandal as employees alleged racist treatment of both customers and employees within the stores, as well as racist remarks form high-ranking representants of the brand during a photoshoot with models of color (Alleyne,

---

[3] The total number of virtues found during the analysis can be found here: https://tinyurl.com/2p9ddt9f3

2020; Barry, 2020). While racist remarks do not necessarily contrast with the two virtues conveyed by the posts, a model of color partnering with a fashion label facing racism allegations might be considered dishonest VS.

Generally, the majority of sponsored posts can be considered virtue-congruent with only 13 out of 64 partnerships raising points of concern. However, all posts conveying *Humanity* that feature a partnership with a fashion label that produces its clothes in the middle east or Asia could be considered as VS, as the workers' rights and working conditions cannot be properly assessed.

6. Discussion

The by far most frequently expressed virtue among the examined VIs was *Humanity*. The virtue was often expressed through posts about interpersonal relationships. This suggests that operators of VIs consider *Humanity* to be highly important in shaping a VI's character. However, previous research has found evidence that a large proportion of viewers of VIs do not perceive them as humanlike (Hofeditz et al., 2022). Especially with regard to negative effects of the associated upward comparison tendencies on social media (Vogel et al., 2014), this raises new ethical challenges and questions regarding the comparison with VIs and the effects on self-esteem.

By conveying virtues such as *Humanity*, *Wisdom*, *Transcendence* or *Courage* (which were the most frequently expressed ones) VIs seem to live similar lives to their followers: They meet friends, own pets, show strong emotions, and have artistic outlets. Most of the time, these postings do not contain any specific message and exist as stand-alone content. This can be put into the context of the work of Mintz (1996), who claims that virtues are a central part of our human self and are the reason we function the way we do. Virtues could be used as metaphorical masks by VIs to pretend to be living a valuable human life, which in turn could be one of the reasons users show such interest in this content.

Some VIs such as Leya Love focus on few virtues: Even though Leya Love portrays a variety of virtues, *Transcendence* is her focus: She covers topics like mental health, meditation, and environmental issues and acts as an educator and advocate on topics like the ongoing climate crisis and endangered animals. Ion Göttlich serves a similar purpose: He offers information on biking sport, which is his exclusive content since he is strongly involved with a bike suppliance company.

This supports the arguments made by Robinson (2020): As long as the content appeals to the audience and they can relate to what the VIs seemingly experience in their everyday life, there is no need for a physical existence. The story being told is far more important than the realness, which contradicts with social media users' need for more authenticity (Robinson, 2020).

Moreover, the results show that posts that represent virtues generate a higher engagement. It seems that humans not only prefer human-realistic avatars over less-realistic ones – as shown by Seymour et al. (2021) – but also like to see virtues expressed by VIs such as *Humanity* and *Wisdom*. Even though taking advantage of virtue portrayal seems to increase the total number of interactions with the posts of the VIs, it should be well planned: Companies need to investigate if the virtues conveyed by the VIs' posts are congruent with their own virtues, since this could lead to controversy. As perfect as VIs seem to be due to the lack of impulsive reactions (Robinson, 2020), it is even more important for companies hiring a VI to look deeper into their own past scandals and problematic behavior.

Ethical implications, as proposed by Crossan (2013) are difficult to gauge: The VIs seem to behave like classic, HIs for the most part and show similar attributes and virtues both in previous research (Moustakas et al., 2020), and in the present study. Since VIs cannot make human mistakes – like reacting impulsively or emotionally – VIs are less prone to be involved in scandals (Robinson, 2020). This implies that it is very important for both clients and the influencer's companies to make sure the virtues of the post are not going to cause any controversy.

Overall, it seems like VIs largely do not differ from HIs in their virtuosity. VIs also serve human attributes like "talent, beauty, style, comedy, sensuality, or authority" (Batista da Silva Oliveira & Chimenti, 2021). Their content covers very similar topics like Art, Beauty, Fashion, LGBTQ awareness, Lifestyle and more (Rundin & Colliander, 2021). Faddoul and Chatterjee (2020) state that as long as the presented framework satisfies the requirements for humans to accept the virtual entity as a valid personality, VIs can serve as a substitute to a real influencer. This is supported by our findings. However, the authors also stress that emotional factors should not be excluded, which would mean that a bigger focus should be set on virtues like *Temperance*, a virtue that is not as present in the posts as the virtue *Humanity*. Lastly, it is important to note that even though the attractiveness of the VI pays a big role when it comes to persuasiveness

(Khan & Sutcliffe, 2014), it has to be treated with caution: Research has shown that the audience desires more authenticity in terms of less perfect influencers (Osburg & Heinecke, 2019). An appearance that is too flawless and perfect can create distrust and pushes consumers away, rather than attracting them. When VIs become more realistic, adding natural flaws to their appearance (like the gap between Miquela's teeth) or personality is a way to circumvent this distrust.

Our analysis identified 13 posts that we considered concerning in terms of VS, as suggested by Levy (2021). VIs can be used more easily to disguise unethical behavior, as they are unable to provide feedback to the enterprises and both their content and appearance can be manipulated easily. HIs usually hold their own opinions and can express their point of view. Before agreeing to an advertisement deal, they can inform themselves regarding the client company and consider whether their approach is in line with their own values. By using VIs, companies can convey certain virtues and ensure that their products are associated with values that HIs would not be willing to convey. We further found no evidence that the accounts of dishonest VS carried out by VIs was recognized as such among their followers. Thus, conveying virtues through VIs seems to be a good opportunity for a company to paint a more positive image of themselves. While the companies behind the VIs could also reject questionable partnerships, this could be easily circumvented if brands create their own VIs. For consumers, it is therefore important to critically question the virtues conveyed in advertisements posted by VIs.

However, VS can also be used positively (Levy, 2021), for instance to emphasize the commitment to sustainability or human rights. This way, a brand can communicate its ethical principles to its customers and generate engagement through fair working conditions or environmental protection. Furthermore, previous research revealed a relationship between VS and offline behavior intention (Wallace et al., 2020). It is possible, then, that conveying virtues through VIs may not only lead followers to internalize them - which is beneficial for society - but could also have a positive impact on companies' offline actions when they collaborate with VIs that convey virtues.

7. Limitations and Future Research

There are some limitations to this paper. First, the selection of influencers does not represent all VIs: This paper focused on the VIs that generate the highest engagement on their profiles. This could lead to distorted results, as VIs with less engagement could have different characteristics or maybe convey virtues either very differently or not at all. Further research should also include VIs with less followers and engagement.

In addition, it is important to state that the analyzed VIs form a heterogeneous group, yet environmental activist VIs may generate different engagement than fashion VIs. These differences should be considered in future research.

We recommend that future research should focus more on how and why exactly people get involved with VIs and what this means in terms of ethical challenges for non-human personalities. When do VIs become too human and what threat can they pose? What opportunities do they hold? Can artificial intelligence be implemented or is it safer to keep them controlled by a company? Observing and understanding how and why the followers react to VIs and how open they are accepting their existence in their everyday life could offer answers to these questions. As we exclusively coded the images and tags of VI's Instagram posts to derive our results, future research should examine the comments on the posts. Furthermore, we recommend running a similar analysis of values and virtues conveyed by HIs and compare these to our findings to establish a better comparability between VIs and HIs.

8. Conclusion

This study has made several contributions to research on the topic of virtuosity and ethics of VIs: Our findings suggest that VIs convey *Humanity* as the most frequently expressed virtue (followed by *Wisdom*, *Transcendence* and *Temperance*). In addition, conveying virtues seems to positively influence followers' engagement. Furthermore, the most frequently expressed virtues are the ones to most likely contain VS. There have been a handful of partnerships which signaled virtues that do not align with the values and ethics of the companies being advertised. This is problematic, as VS can decrease the followers' trust in both the VI and the company. We found that there is evidence of VIs that have been used for virtue signaling by companies, without their followers taking note.

In total, we contribute to IS research by providing knowledge on how VIs express values and virtues and how they are used to increase their engagement. This implies that first predictions on the impact of ethical

behavior on follower engagement (and subsequently marketing value) can be established. We examined how VS can be used by companies to convey more positive values in combination with a product without being noticed. However, the communication of virtues by VIs can not only result in dishonest VS and a reduced self-esteem of the followers due to an upward comparison, but also possibly lead to followers and companies acting more virtuously.

We contribute to marketing practice by offering practitioners more insight into the way in which VIs can be used to convey certain virtues and values in their posts. This knowledge can be used to choose VIs that align with a company's values – or the ones they want to convey – for sponsorships and advertisement campaigns. However, our findings also warn consumers that virtue signaling can occur with VIs.

9. References

Alibakhshi, R., & Srivastava, S. C. (2022). Post-Story: Influence of Introducing Story Feature on Social Media Posts. Journal of Management Information Systems, 39(2), 573–601.

Alleyne, A. (2020). The fashion industry says it stands against racism. Critics aren't buying it. *CNN Style*. https://edition.cnn.com/style/article/fashion-industry-black-lives-matter/index.html

Aristotle. (n.d.). *Nicomachean Ethics*. Harvard University Press. Abgerufen 6. Dezember 2021, von http://www.perseus.tufts.edu/hopper/text?doc=Perseus: text:1999.01.0054

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.

Barry, C. (2020). Luxury fashion brands forced to confront racism in the industry. *PBS News Hour*. https://www.pbs.org/newshour/arts/luxury-fashion-brands-forced-to-confront-racism-in-the-industry

Batista da Silva Oliveira, A., & Chimenti, P. (2021). „Humanized Robots": A Proposition of Categories to Understand Virtual Influencers. *Australasian Journal of Information Systems*, *25*.

Bowen, S. A. (2013). Using Classic Social Media Cases to Distill Ethical Guidelines for Digital Engagement. *Journal of Mass Media Ethics*, *28*(2), 119–133.

Cooper, C. (2022). The values of 'Manhood': The dangerous rise of Andrew Tate. The Oxford Blue. https://www.theoxfordblue.co.uk/2022/08/25/the-values-of-manhood-the-dangerous-rise-of-andrew-tate/.

Crossan, M., Mazutis, D., & Seijts, G. (2013). In Search of Virtue: The Role of Virtues, Values and Character Strengths in Ethical Decision Making. *Journal of Business Ethics*, *113*(4), 567–581.

Djafarova, E., & Rushworth, C. (2017). Exploring the credibility of online celebrities' Instagram profiles in influencing the purchase decisions of young female users. *Computers in Human Behavior*, *68*, 1–7.

Eisenstein, J., O'Connor, B., Smith, N. A., & Xing, E. P. (2014). Diffusion of Lexical Change in Social Media. *PLoS ONE*, *9*(11), e113114.

Faddoul, G., & Chatterjee, S. (2020). A Quantitative Measurement Model for Persuasive Technologies Using Storytelling via a Virtual Narrator. *International Journal of Human–Computer Interaction*, *36*(17), 1585–1604.

Faßmann, M., & Moss, C. (2016). *Instagram als Marketing-Kanal*. Springer Fachmedien Wiesbaden.

Fleiss, J. L., & Cohen, J. (1973). The Equivalence of Weighted Kappa and the Intraclass Correlation Coefficient as Measures of Reliability. *Educational and Psychological Measurement*, *33*(3), 613–619.

Freberg, K., Graham, K., McGaughey, K., & Freberg, L. A. (2011). Who are the social media influencers? A study of public perceptions of personality. *Public Relations Review*, *37*(1), 90–92.

Hofeditz, L., Mirbabaie, Mi., Stieglitz, S., & Holstein, J. (2021). Do You Trust An AI-Journalist? A Credibility Analysis Of News Content With AI-Authorship. *Proceedings of the European Conference of Information Systems*. Wellington, NZ.

Hofeditz, L., Nissen, A., Schütte, R., & Mirbabaie, M. (2022). Trust Me, I'm An Influencer! - A Comparison Of Perceived Trust In Human And Virtual Influencers. *Proceedings of the European Conference of Information Systems*. Timisoara, Romania.

Instasize. (2021). Increase Engagement by Removing Instagram Ghost Followers. *instasize*. https://instasize.com/blog/increase-engagement-by-removing-instagram-ghost-followers

Kádeková, Z., & Holienčinová, M. (2018). Influencer Marketing as a Modern Phenomenon Creating a New Frontier of Virtual Opportunities. *Communication Today*, *9*(2). http://cejsh.icm.edu.pl/cejsh/element/bwmeta1.element.cejsh-29ccb3e1-8052-4f82-b9f7-b61b1a58fe21

Khan, R. F., & Sutcliffe, A. (2014). Attractive Agents Are More Persuasive. *International Journal of Human-Computer Interaction*, *30*(2), 142–150.

Kumar, V., Rajan, B., Venkatesan, R., & Lecinski, J. (2019). Understanding the Role of Artificial Intelligence in Personalized Engagement Marketing. *California Management Review*, *61*(4), 135–155.

Levy, N. (2021). Virtue signalling is virtuous. *Synthese*, *198*(10), 9545–9562.

Lim, J. (2021). Maison Margiela unveils genderless Icons Collection for AW21. *The Industry Fashion*. https://www.theindustry.fashion/maison-margiela-unveils-genderless-icons-collection-for-aw21/

Logan, M. (2018). Is the Follower Count Dead? Why Bloggers Need to Look Beyond Reach & Focus on This Key

Metric…. *medium*. https://medium.com/willu/is-the-follower-count-dead-why-bloggers-need-to-look-beyond-reach-focus-on-this-key-metric-21fc04395de6

Mayring, P. (2015). Qualitative Content Analysis: Theoretical Background and Procedures. In A. Bikner-Ahsbahs, C. Knipping, & N. Presmeg (Hrsg.), *Approaches to Qualitative Research in Mathematics Education* (S. 365–380). Springer Netherlands.

mediakix. (2021). Influencer Tiers For The Influencer Marketing Industry. *Mediakix*. https://mediakix.com/influencer-marketing-resources/influencer-tiers/

Mintz, S. M. (1996). Aristotelian virtue and business ethics education. *Journal of Business Ethics*, *15*(8), 827–838.

Moustakas, E., Lamba, N., Mahmoud, D., & Ranganathan, C. (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)*, 1–6.

Najari, S., Salehi, M., & Farahbakhsh, R. (2021). GANBOT: A GAN-based framework for social bot detection. *Social Network Analysis and Mining*, *12*(1), 4.

Osburg, T. H., & Heinecke, S. (Hrsg.). (2019). *Media trust in a digital world: Communication at crossroads*. Springer.

Osmond, P. (2021, September 14). Tiffany & Co. Creates controversy with new campaign. *The Tufts Daily*. https://tuftsdaily.com/arts/2021/09/14/tiffany-co-creates-controversy-with-new-campaign/

Peterson, C., & Seligman, M. (2004). *Character Strengths and Virtues: A Handbook and Classification*. Oxford University Press.

Qiu, L., Chhikara, A., Vakharia, A. (2021) Multidimensional Observational Learning in Social Networks: Theory and Experimental Evidence. Information Systems Research 32(3):876-894.

Robinson, B. (2020). Towards an Ontology and Ethics of Virtual Influencers. *Australasian Journal of Information Systems*, *24*.

Rundin, K., & Colliander, J. (2021). Multifaceted Influencers: Toward a New Typology for Influencer Roles in Advertising. *Journal of Advertising*, *50*(5), 548–564.

Ryan, D., & Jones, C. (2009). *Understanding digital marketing: Marketing strategies for engaging the digital generation*. Kogan Page.

Seymour, M., Yuan, L. (Ivy), Dennis, A. R., & Riemer, K. (2021). Have We Crossed the Uncanny Valley? Understanding Affinity, Trustworthiness, and Preference for Realistic Digital Humans in Immersive Environments. *Journal of the Association for Information Systems*, *22*(3), 591–617.

Sobande, F. (2021). Spectacularized and Branded Digital (Re)presentations of Black People and Blackness. *Television & New Media*, *22*(2), 131–146.

Stapleton, P., Luiz, G., & Chatwin, H. (2017). Generation Validation: The Role of Social Comparison in Use of Instagram Among Emerging Adults. *Cyberpsychology, Behavior and Social Networking*, *20*(3), 142–149.

Stieglitz, S., Hofeditz, L., Brünker, F., Ehnis, C., Mirbabaie, M., & Ross, B. (2022). Design principles for conversational agents to support Emergency Management Agencies. International Journal of Information Management, 63, 102469.

Tan, S.-M., & Liew, T. W. (2020). Designing Embodied Virtual Agents as Product Specialists in a Multi-Product Category E-Commerce: The Roles of Source Credibility and Social Presence. *International Journal of Human–Computer Interaction*, *36*(12), 1136–1149.

Tasset, J. L. (2019). Bentham on ' Hume ' s Virtues '. In G. Varouxakis & M. Philip (Eds.), Happiness and Utility (pp. 81–97). UCL Press. http://www.jstor.com/stable/j.ctvf3w1s5.9.

Teo, L. X., Leng, H. K., & Phua, Y. X. P. (2019). Marketing on Instagram: Social influence and image quality on perception of quality and purchase intention. *International Journal of Sports Marketing and Sponsorship*, *20*(2), 321–332.

The Advertising Standards Authority. (2019). *The labelling of influencer advertising A report on what labels and other factors help people understand when influencers are posting advertising content*. https://www.asa.org.uk/static/uploaded/e3158f76-ccf2-4e6e-8f51a710b3237c43.pdf

Tosi, J., & Warmke, B. (2016). Moral Grandstanding. *Philosophy & Public Affairs*, *44*(3), 197–217.

VirtualHumans. (2021). About VirtualHumans.org | Create a Virtual Influencer. *VirtualHumans.Org*. https://www.virtualhumans.org/about

Vogel, E. A., Rose, J. P., Roberts, L. R., & Eckles, K. (2014). Social comparison, social media, and self-esteem. *Psychology of Popular Media Culture*, *3*(4), 206–222.

von der Pütten, A. M., Krämer, N. C., Gratch, J., & Kang, S.-H. (2010). "It doesn't matter what you are!" Explaining social effects of agents and avatars. *Computers in Human Behavior*, *26*(6), 1641–1650.

Wallace, E., Buil, I., & de Chernatony, L. (2020). 'Consuming Good' on Social Media: What Can Conspicuous Virtue Signalling on Facebook Tell Us About Prosocial and Unethical Intentions? *Journal of Business Ethics*, *162*(3), 577–592.

Wang, Huang, Q., & Davison, R. M. (2021). How do digital influencers affect social commerce intention? The roles of social power and satisfaction. *Information Technology & People*, *34*(3), 1065–1086.

Xie-Carson, L., Benckendorff, P., & Hughes, K. (2021). Fake it to make it: Exploring Instagram users' engagement with virtual influencers in tourism. *Travel and Tourism Research Association: Advancing Tourism Research Globally*, *17*.