

# **“Lil Miquela makes me feel uncomfortable, but I keep following her”**

*An interview study on motivations to engage with virtual influencers on social networking sites*

**Student/author**

Mick Wortelboer

**University of Twente**

Communication Science, Master's thesis project  
Faculty of Behavioural, Management, and Social Sciences

**Supervisor**

Dr. Ruud Jacobs

**Co-reader**

Dr. Joyce Karreman

**Date**

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## Abstract

**Objective** – Social media influencers (SMI) have become very importance for brands over the last decade as consumers seemed to be very sensitive for recommendations by influencers. This market of influencers radically changed in 2016 due to the arrival of Lil Miquela on Instagram as first computer-generated imagery-influencer (CGI-I). CGI-Is are humanlike digital creatures who only live online – controlled by humans – and provide brands with a controllable and enduring brand endorser. In the last years, dozens - if not hundreds – of CGI-Is have been introduced to social media, with whom millions of people interact with every day. This research aims to investigate why these millions of people interact with CGI-Is on social media. In addition, scholars expect an AIG-I – a CGI-I fully driven by artificial intelligence – to be introduced in the foreseeable future. It would possess the ability to scale quick and might become an innovative and cost efficient opportunity for brands. Hence, the second objective of this study is to investigate social media users' expectations of this new phenomenon.

**Method** – A qualitative research method was developed to obtain new insights. Semi-structured interviews with 29 participants were conducted to provide some flexibility for respondents and to enrich data diversity further, while a convenience sampling strategy was used to find participants. These were recruited via CGI-Is' Instagram profiles, e.g., likes and comments on posts or public followers lists. During the interviews people were asked to verbalize their motivations of engagement. Uses and Gratifications Theory (UGT) and Theory of Planned Behaviour (TPB) were used as theoretical foundation for the topic list and eventually to interpret the outcomes. Perceived loneliness and perceived similarities were added as these were expected to drive parasocial interactions (PSI) with CGI-Is. First time engagement (FTE), long-term engagement (LTE), and disengagement (DE) were conceptualized as target behaviours. A deductive thematic analysis was used to analyse the results.

**Results** – Outcomes of the interviews suggest that people visited CGI-Is' Instagram profiles (FTE) for other reasons than they followed or unfollowed a CGI-I. Social media engagement and the visibility of CGI-Is on social media seem to explain whether or not they will be exposed to CGI-Is. After exposure, users visit CGI-I's Instagram profile for the first time in order to gratify their need for curiosity or to "solve the mystery". Subsequently, (non-)identification and positive attitudes towards their behaviour seemed to influence people's need to seek for information and entertainment, which resulted in following behaviour. Negative evaluations of their behaviour, however, are likely to lead to irritation and ultimately disengagement. Further, boredom, perceived loneliness, and perceived similarity were identified as drivers of LTE, although, these are not expected to be explained by users' identification or attitudes. Disappointments about a lack of reciprocity and "solving the mystery" were found as drivers of unfollowing behaviour. Lastly, most respondents mentioned negative expectations of the futuristic AIG-I since they were sceptical towards their creepiness, lack of authenticity, and utilitarianism needs. On the other hand, CGI-I's autonomous character, user's curiosity, and entertainment motivations would drive engagement with AIG-Is.

**Conclusion** – This study provides brand managers and marketing agencies with first insights into social media users' drivers to engage with CGI-I and proposes the computer-generated imagery-influencers engagement model. It can be argued this is a multifaceted process, wherein both conscious and unconscious concepts come into play. Besides drivers of engagement, this study concludes that a high level of social presence applied to CGI-Is is generally preferred, however, may depend on the individual and background. To the researcher's knowledge, this paper was the first to focus on expectations of the futuristic AIG-I. Future research is definitely needed on this topic in order to provide practitioners with reliable recommendations.

**Keywords:** *social networking sites, engagement, drivers, virtual influencers, computer-generated imagery-influencers, artificial intelligence-generated-influencers, parasocial relationship*

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## 1 Introduction

‘Are you really a robot?’ This is one of thousands of comments on Lil Miquela’s Instagram posts. Millions of social media users engage with computer-generated imagery-influencers (CGI-I) to date, despite not always knowing their virtual origins. Miquela has been developed by means of computer-generated imagery-technology (CGI), making her a virtual influencer (VI). CGI-Is are technology-based endorsers of product advertisements on social networking sites (SNS), such as: Instagram and TikTok. Lil Miquela is created by marketing agency Brud in 2016; making her the first CGI-I. Besides her remarkable visuals, Miquela has an own story. She describes herself as “19-year-old robot living in LA” and fights for human rights such as the movement #BlackLivesMatter and the LGBTQ+ community (@lilmiquela, 2021).

Although many marketers were sceptical about CGI-Is, Lil Miquela surprisingly continued growing. Currently, the account has over three million followers – also known as ‘Miqualiens’ – on Instagram, which makes her interesting for advertisement purposes. Originally, CGI-Is were deployed in branches such as cosmetics and the fashion industry, however, a few years later application areas of CGI-Is expanded across e.g., music and healthcare (Park et al., 2021). Nowadays, CGI-Is are more and more seen as interesting technique for online marketing campaigns of well-known brands (Tiffany, 2019). For example, Lil Miquela collaborated with famous brands such as Samsung, Mini, and Givenchy, whilst the Asian CGI-I Imma Gram surprised visitors of the Paris Fashion week with her omnipresence (see Appendix A). These examples showcase the prominent status of CGI-Is in brands’ current choices in their marketing communication strategy.

Thanks to the rapid technological developments, this study will also discuss a futuristic type of influencer which, unlike the human managed CGI-I, would generate its content based on artificial intelligence (AI). This non-available phenomenon is defined as an artificial intelligence-generated-influencer (AIG-I). AI is the technology which incorporates natural language processing, image recognition, speech recognition, problem solving, and machine learning to eventually become a data-driven machine. Therefore, an AIG-I is expected to affect consumer behaviour in a different way than the CGI-I does as social media users interact with an autonomous account instead of a human controlled account. This technology is expected to decrease brands’ costs on influencer marketing and social media management due to AIG-I’s autonomy and ability to scale. A working AIG-I is still in development (Schmitt, 2019), however, scholars expect a bright future for AIG-Is, as AI behaviours and decisions become more consistent and realistic (Appel et al., 2020; Sterne, 2017). Thus, this study distinguishes two types of technology-generated influencers, which are covered by the container concept virtual influencer (VI).

Multiple scholars have been investigating distinctive perspectives on CGI-Is, i.e., the adoption, trustworthiness, or ethical inquiries on CGI-Is (Brown, 2019; Kaplan, 2019; Libbenga, 2020; Olivi, 2019), however, qualitative inquiries in relation to CGI-Is remained underexplored. Moreover, scholars called for future research directions on engagement drivers (Park et al., 2021; Robinson, 2020; Schmitt,

2019). AIG-Is remained fully underexplored to date, despite some scholars speculating on their bright future and possibilities for brands. Hence, this qualitative study will shed a light on 1) motivation patterns of participants who engage with a CGI-I and 2) expectations of engagement with the futuristic AIG-I. In order to fill in the research gap of engagement drivers across VIs, this study will explore the following research question:

*RQ: What underlying motivational factors drive audiences to engage with computer-generated imagery-influencers and what are their expectations of engagement with the futuristic artificial intelligence-generated-influencers on social networking sites?*

In order to research social media users' most prominent motivations to engage with VIs, a qualitative research design has been developed. Interviews will serve as method to be able to gather deeper insights in personal perspectives. A conceptual framework has been developed in order to provide this study with a lens and to help understanding why social media users engage with VIs. The target behaviours are conceptualized as first time engagement (FTE), long-term engagement (LTE), and disengagement (DE). As this type of engagement is assumed to be mostly a high-involvement task and thus consciously made, the designed framework include the *Theory of Planned Behaviour* (TPB) and *Uses and Gratifications Theory* (UGT). TPB's relevance lies in its high power to predict consumer behaviour and UGT provides several gratification dimensions in relation to mass media. However, engagement with VIs may also be driven by unconscious factors. Hence, the conceptual model is completed with the concepts perceived similarities and loneliness as drivers of parasocial interaction (PSI).

This research is theoretically relevant since results will provide scholars with a starting point in quantitative follow-up studies on CGI-Is. Scholars will also be accommodated with first insights and future research directions in audiences' expectations on the non-existing AIG-I. Furthermore, this study will be relevant for practitioners (e.g., marketers and brand managers), since it will provide fruitful data on social media users' motivations to engage with CGI-Is and their expectations on the non-existing AIG-I. Moreover, knowledge will provide marketing managers to better operationalize their VI as marketing tool.

## **2 Theoretical framework**

This paragraph discusses literature related to the subject of computer-generated imagery-influencers and artificial intelligence-generated-influencers. It clarifies and defines several relevant constructs and phenomena being taken into account within this research, and finally it justifies the choice to incorporate the Theory of Planned Behaviour and Uses and Gratifications Theory within the conceptual model.

### **2.1 Influencer marketing**

Within the 20<sup>th</sup> century, celebrities on mass communication channels were the main actors for brands to influence and persuade social media users to purchase their products and services. The rise of social networking sites (SNSs) in the 21<sup>st</sup> century, however, resulted in a new group of celebrities, being social media influencers (SMI). Besides clarifying SNSs and SMIs, this section also reveals social media users' motivations to engage on SNSs, and in particular with SMIs.

#### **2.1.1 Social networking sites**

Prior to the rise of social networking sites (SNS) (also known as social media), social media users mostly consumed media in one-way communication, meaning that a reciprocal interaction between sender and receiver was nearly impossible (Kietzmann et al., 2011). To date, SNSs dominate social media users media consumption, since these channels provide the possibility to create, share, and interact on such platforms (two-way communication). In 2021, Facebook was the platform with the most active users (2.9 billion), followed by YouTube (2.3 billion), and Instagram (1.4 billion), which shows that SNSs did not lose any of their power in the last couple of years (We Are Social et al., 2021). According to the definition of Kaplan and Haenlein (2010), social networking sites are 'applications that enable users to connect by creating personal information profiles, inviting friends and colleagues to have access to those profiles, and sending e-mails and instant messages between each other' (p. 63).

SNSs provide massive opportunities for brands by means of Social Media Marketing tools, such as Facebook Business. Another opportunity for brands is to invest in social media influencers (SMI), which is assumed to be the marketing tool with the best Return On Investment (ROI), compared to other marketing instruments (Bailis, 2020). In other words, the implementation of influencers within a marketing strategy will generate the highest turnover per euro spent.

#### **2.1.2 Social media influencers**

Social media influencers (SMI), in an entertainment context, are defined by Yuan and Lou (2020) as 'content generators with celebrity status on social media' (p. 59). Freberg et al. (2011) provide an advertising perspective on SMIs' definition, being 'independent third party endorsers who shape attitudes of their audiences' (p. 90). As there is no consensus on this definition among scholars, current



article developed its own SMI-definition, being: ‘Opinion leaders on social media whose core business is to create sponsored content in order to promote brands’ products and services to their audiences’.

SMIs have been highly successful endorsers for the last decade, since they are able to influence social media users’ brand attitudes during the whole day via social media tools such as Instagram Stories (Nafees et al., 2021). This is realized by constantly interacting with followers and updating followers about their stories, personalities, attitudes, and brand recommendations, which intensifies the parasocial relationship (PSR) between the audience and celebrity (Yuan & Lou, 2020). Furthermore, the strength of this relationship between audience and SMI is mediated by several following factors, such as influencer’s degree of similarity (Nafees et al., 2021; Xiang et al., 2016; Yuan & Lou, 2020). For example, an influencer with many similarities is more likely to generate strong PSRs with his/her audience.

## 2.2 Virtual influencers

Computer-generated imagery-influencers (CGI-I) are technology-generated endorsers on SNSs, meaning that they do not live in the real world (Park et al., 2021). These CGI-Is could become the futuristic successors of traditional SMIs, as these provide brands with an enduring brand endorser, in contrast to traditional SMI’s who can withdraw a sponsorship (Moustakas et al., 2020; Thomas & Fowler, 2021). Nowadays, CGI-Is are controlled by humans, however, visionary scientists expect another CGI-I to appear in the future, being fully generated via artificial intelligence (AI). Hence, this article discusses both computer-generated imagery-influencers (CGI-I) and the futuristic artificial intelligence-generated-influencers (AIG-I). Both are seen as virtual influencers (VI), however, possess distinctive characteristics. Within the following table, these are assessed among the three types of influencers: SMI, CGI-I, and AIG-I.

**Table 1**

*Expected differences in influencers’ characteristics*

Item	SMI	CGI-I	AIG-I
Authenticity	YES	SOME	NO
Autonomy	YES	NO	YES
Brand controllability	NO	YES	SOME
Cost-efficient	NO	SOME	YES
Enduring brand endorsement	NO	YES	YES

### 2.2.1 Computer-generated imagery-influencers

The CGI-I is a modern-day variant of the SMI on SNSs, whose appearance is created via computer-generated imagery-technology (CGI) and whose story, personality and even their feelings are made-up (Moustakas et al., 2020). CGI-Is were originally applied in branches such as the fashion industry or

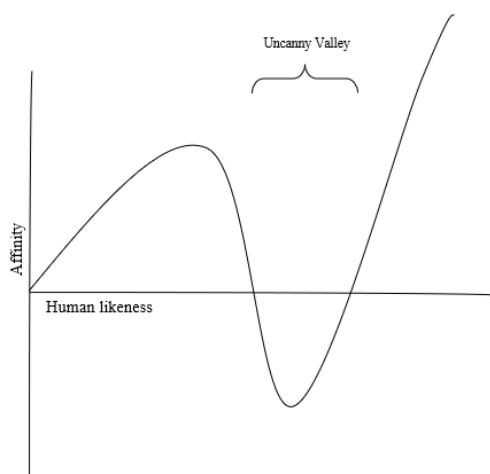
cosmetics, however, these application areas expanded towards many others, such as travelling, music, and healthcare (Park et al., 2021).

CGI-Is are social actors on SNSs, meaning they participate in public discourses online. The power of CGI-Is, being a social actor, lies in their brand controllability and the phenomenon of social presence (Lee & Nass, 2003). In literature, social presence is defined as: “the degree of being conscious of the other human in virtual communities” (Short et al., 1976). For example, traditional influencers possess a high social presence, since their appearance is humanlike, and they post information of their human experiences and feelings. Social media users generally experience high social presence as pleasant, since it provides them with a meaningful relationship (Kim, 2016).

Technological developments have ensured current CGI-Is to approach the level of humans’ social presence, which should enhance their likeability according to Social Presence Theory. Although, literature delineates a paradoxical effect of CGI-I’s social presence, which is explained by the Uncanny Valley theory from Mori et al. (2012). This theory provides an imagined graph illustrating a nonlinear relationship between an entity’s level of human likeness and the level of affinity. This assumes that non-humans, identified as such, containing a high social presence, would result in awkward feelings among social media users when these appear on their personal content feed. These feelings subsequently decrease their perceived autonomy and thus social media users’ intention to engage, which eventually leads to lower effectivity of advertisements (Labrecque, 2014). As Mori et al. (2012) showed in their study, it is assumed that non-humans evoke the Uncanny Valley at a certain point of social presence. This is visualized in figure 1. In other words, CGI-Is should assess the optimal proportion in social presence in order to prevent negative feelings, which is expected to cause negative comments, unfollowing behaviour and even a negative brand evaluation.

**Figure 1**

*Visualization of the Uncanny Valley*



An example of a CGI-I considering this theory of a lower social presence is @esther.olofsson (2021). The inventors of Esther, RauwCC, made her appearance not too realistic in order to prevent awkward feelings. “We want to intrigue our followers, and not fool, because that is not good for trust”, said RauwCC CEO Maarten Reijgersberg (Boerop, 2020).

Schmitt (2019) tried to explain these uncomfortable feelings through the introduction of the new phenomenon of speciesism: stating that, although CGI-Is look like humans and act the same, they are still perceived as less human, compared to real humans. Audiences’ perceptions of this technology-generated appearance have been mostly neglected in literature to date, with the exception of Jang and Eunah (2020), among others exploring the examination and preferred styles of CGI-Is in Korea. They found that CGI-Is were positively assessed due to their attractive appearance, wide utilization, innovative use, freshness, separation from private identity, and time and cost savings, while considered negatively due to their unrealistic appearance and antipathy against replacing a person’s role. Further, preferred styles of CGI-Is are assumed to be similar to real humans, thus applying a high social presence.

Besides their appearance, most CGI-Is possess a unique made-up life narrative, comparable with the traditional SMIs (Olivi, 2019). Such story is communicated via social media posts or reciprocal interaction in the comment section. Most often, these narratives connect with stories of their audiences and pick up on diversity, equality, and sustainability, which are important topics for millennials (Generation Y) or younger (Generation Z). These made-up stories are created by e.g., marketing agencies and brand managers, designed to strengthen the PSR and elicit intense emotion, exposure, persuasion, and return on investment (Block & Lovegrove, 2021). In the context of CGI-Is, Chung and Cho (2017) described PSRs as feelings of a real human connection, wherein PSIs provide a source trustworthiness via self-disclosure and stories about CGI-I’s identity. This would suggest that CGI-Is have a similar level of authenticity as human influencers, who are generally perceived as a trustworthy source through self-disclosure.

Although storytelling enhances the degree of intimacy between audiences and CGI-Is, there may be some ethical considerations involved, since CGI-I’s narratives are fully made-up by professionals (Olivi, 2019). For example, this allows white marketers to write a story of a black person, which is quite sensitive in current society. Hence, it can be questioned whether or not social media users perceive this storytelling as ethical and whether this affects social media users’ engagement.

### **2.2.2 Artificial intelligence-generated-influencers**

AI is the technology containing natural language processing, image recognition, speech recognition, problem solving, and machine learning (Paschen et al., 2020). This technology becomes more and more sophisticated, which enables scholars to look into new applications of AI. Currently, technology is not refined enough to manage an artificial intelligence-generated-influencer (AIG-I) out of any problems yet, although scholars have high expectations of them (Hill & White, 2020). Sterne (2017) dedicated a book on AI-technology in marketing and identified the bright future of the application of AI in social

media engagement: “Social bots are starting to take on the Turing Test with modest success, but in time they will be able to represent your brand as a first line of defence” (p.157). Moreover, Appel et al. (2020) looked into the futuristic role of social media in marketing strategies and also named “social media by non-humans” as development in the far future. Although these scholars foresee great potential in a futuristic AIG-I, scientific research on the phenomenon remains underexplored. This study will shed a light on social media users’ expectations of engagement with AIG-Is.

According to Thomas and Fowler (2021), an AIG-I should be defined as ‘a digitally created artificial human who will be associated with Internet fame and uses software and algorithms to perform tasks like humans’ (p.12). Informed by previous definition, this study operationalizes an AIG-I as “A self-guiding program which is associated with a celebrity status on social media and utilizes algorithms in order to create a persona which represents the target group and to post attractive and profitable content for the target group”. Noteworthy here is the absence of the advertisement-role, which is expected to be added later on with regards to sceptical media users with trust issues.

It is also expected that AIG-Is would affect social media users’ engagement in a different way than the CGI-I does, as the AIG-I possesses distinctive characteristics. First, the AIG-I would automatically generate content, thus becoming an autonomous social actor on SNSs, comparable with an independent SMI. This autonomy would potentially increase engagement of social media users in contrast to engagement with marketer-generated CGI-Is (Labrecque, 2014). In addition, only social media users’ perceptions of data-generated content might already increase the degree of autonomy and thus engagement, according to Farrera Saldaña (2021). This perception might be created by e.g., pretending to be a technology-generated influencer with ‘data-generated’ content. For example, CGI-I Lil Miquela portrays herself as an AI and physical robot, which might affect followers’ perception of her autonomy. It is expected that these people – who took Miquela’s word – might respond differently to her if they knew about the truth, being human controlled.

Besides AIG-I’s positive characteristics, the new application also brings disadvantages. AIG-I’s source trustworthiness of PSRs may be decreased as their storytelling is fully data-generated and thus not authentic, in contrast to self-managed SMIs. This is explained by influencer’s self-disclosure, as this normally strengthens the PSR, but would become paradoxical for the AIG-I. This process might result in a decrease in engagement with the AIG-I (Chung & Cho, 2017; Labrecque, 2014).

Furthermore, the application of an AIG-I would also be a cost-efficient solution for brands, in comparison with a CGI-I. Due to aforementioned aspects of AI-technology, it would be possible to create an automatic generated influencer for brands, which allows them to scale up exponentially, in contrast to the manually generated content of the CGI-I (Thomas & Fowler, 2021). In other words, brands would be able to decrease daily costs with time spent on social media management, including content creation, interaction with followers, and crisis management, which ensures that the futuristic AIG-I would be especially interesting for commercial goals (Panda et al., 2019). On the other hand, it

is likely that not all brands will immediately prefer such AIG-Is, since the data-generated content would not solely take into account brands' preferences, thus not providing the brand controllability.

Microsoft briefly introduced a predecessor of the AIG-I in 2016, as the first social media chatbot. However, within a day the experiment – called Tay – was suspended, since the learning software generated inappropriate tweets (Wolf et al., 2017). In 2017, Microsoft announced the successor of Tay, called Zo. This social, cultural, and technological experiment became a success as it did not become rude to others, although, Microsoft discontinued Zo from social media in 2019 (@zochats, 2019). On the 6<sup>th</sup> of April 2021, the first ever AIG-I – called Alice – was sold within an intelligent NFT. The AIG-I, called Alice, is still underdeveloped, but was able to interact within an interview (Rasmussen, 2021). Considering these experiments and scholars' expectations, it is likely that a functioning AIG-I would be able to represent the first brand soon (Appel et al., 2020; Sterne, 2017).

### **2.3 Consumer engagement on social networking sites**

Despite the expected bright future of VIs on SNSs, little is known about why social media users would like to interact with them. Consumer engagement (CE) is seen as psychological state of interactivity between a consumer and brand, wherein cognitive, affective, and behavioural activity is included (Avnet & Higgins, 2006; Brodie et al., 2013). This study distinguishes three target behaviours, being: first time engagement (FTE), long-term engagement (LTE), and disengagement (DE) (Luarn et al., 2015). FTE focuses on visiting the profile for the first time, LTE on following the account, and DE on unfollowing-behaviour.

A certain motivation is always required before a behaviour can be performed (Yuan et al., 2016). E.g., Gen Z social media users' needs for watching football and entertainment might drive them to watch sports videos of Lionel Messi on YouTube. According to Kaplan and Haenlein (2010), underlying motivations for social media users to interact on SNSs have psychological origins, being the desire to achieve a certain status and to attain a certain personal identity online. These are realized by a person's self-disclosure, through likes, shares, and comments (Schau & Gilly, 2003).

Literature suggests that motivations to use a SNS may differ per influencer, audience, and platform. For example, social media users are motivated to use Facebook for its social connection, information-seeking, entertainment, and relationship-building, while Snapchat AR lenses are used for amusement, uniqueness, interest, brand support, and engagement with others (Dodoo & Youn, 2021; Yuan et al., 2016). Scholars also suggest distinctive dimensions for interaction with brands on SNSs, being utilitarian, hedonic, and social dimensions (Chahal et al., 2020). Generally, brand pages are perceived as less credible than influencers, since social media users prefer to interact with a person instead of a corporate brand, which is explained by the phenomenon of anthropomorphization (Kervyn et al., 2012).

Multiple scholars investigated drivers to engage with SMIs (Croes & Bartels, 2021; Morton, 2020), however, drivers of (dis)engagement with CGI-Is remained underexplored to date and will

therefore be explored within this article. In order to do this, foundational theories on consumer behaviour are merged with drivers of PSIs. Hence, the following chapters will elaborate on Uses and Gratifications Theory, Theory of Planned Behaviour, perceived homophily, and loneliness.

## **2.4 Uses and Gratifications Theory**

Uses and Gratifications Theory (UGT) refers to a user-centred approach of why audiences consume a certain medium which gratifies their needs. UGT assumes that media users are goal directed, self-aware, and active (Katz et al., 1973). Rather than deep psychological motivations, UGT will be implemented to assess concrete antecedents of consumer behaviour (Muntinga et al., 2011). Katz and colleagues (1973) identified several steps towards media usage, being: “the social and psychological origins of needs which generate expectations (...) resulting in need gratifications and other consequences” (pp. 510). Eventually, these scholars identified four main aspects of mass media gratifications: information, personal identity, entertainment, and social interaction (Blumler & Katz, 1975).

To date, social media user’s gratifications to engage with virtual influencers (VI) remained underexplored, however, millions of social media users already engage with VIs. As mentioned afore, the traditional gratifications only focused on one-way mass media communication, thus new categorizations of VI-gratifications are needed. Croes and Bartels (2021) recently examined possible drivers for SMI-engagement and identified four distinctive motivations, based on UGT: cool and new trend, relaxation, boredom, and information seeking/sharing. It could be that social media users are motivated to engage with VIs to meet similar needs as SMI-engagement. This is confirmed by Pittman and Sheehan (2015), as these scholars found five motivations comparable with SMI-engagement whilst investigating the behaviour of binge watching. Active involvement, relaxation, hedonism, to pass time, and social behaviour were identified, which are quite similar to previously mentioned ones. Hence, five of these predictors (and mergers) are taken into account as potential antecedents of the target behaviours: FTE, LTE, and DE.

Within this study’s context, ‘cool and new trend’ refers to people who interact with a CGI-I since their significant others show a similar behaviour. I renamed this concept ‘cool and new trend’ to a new concept of uniqueness, also considering claims from Dadoo and Youn (2021), who applied the UGT-approach on the new medium of Snapchat AR-lenses. Secondly, ‘entertainment’ comprises hedonic motivations and ‘boredom’ relates to passing useless time. Finally, ‘information seeking’ includes learning something from others. Further, I assume social media users also possess motives to disengage with VIs, as they might feel awkward or feel manipulated, as delineated by the Uncanny Valley (Mori et al., 2012). Hence, the demotivating driver ‘irritation’ is included as category, as described by Florenthal (2019) from Baek and Morimoto (2012). ‘Irritation’ refers to negative evaluations or experiences with a CGI-I, which might result in disengagement. For example, sponsorship disclosure could possibly result in disengagement with CGI-Is (Zhang et al., 2020).

This study will research whether or not those concepts apply to engagement with CGI-Is. In addition to aforementioned categorizations, it is possible that new drivers to appear since VIs are assumed to trigger specific media user's needs and gratifications. To date, it has not yet been investigated what media consumption needs drive audiences to engage with CGI-Is. As a result, I will take a Uses and Gratifications (UGT) approach in order to become aware of these motivations, thus giving rise to the first sub question:

*S1: What are social media users' media needs that lead to engagement with a computer-generated imagery-influencer?*

Moreover, this study focuses on AIG-Is. As I foresee social media users to be able to verbalize their expectations on their media needs regarding the AIG-Is, the second sub question is developed:

*S2: What expectations do social media users have of their media needs that affect engagement with an artificial intelligence-generated-influencer?*

## **2.5 Theory of Planned Behaviour**

This study incorporates UGT with Theory of Planned Behaviour (TPB), as the combination is found to be beneficial for state-of-the-art innovations (Kinnally & Bolduc, 2020). TPB is a well-established theory in the domain of social sciences, based upon thoughts that consumer decision making mainly depends on logical reasoning. The model was developed by Ajzen (1991) and suggests that beliefs are at the start of decision making by informing the three core predictors: attitudes, subjective norms, and perceived behavioural control (PBC). Together, these components could predict behaviour intention (Ajzen, 1991). Subsequently, behaviour intention is linked to actual behaviour. Finally, attitudes and subjective norms influence actual behaviour only indirectly via intention, whilst PBC influences consumer behaviour directly as well. However TPB is mostly applied to quantitative studies (Kinnally & Bolduc, 2020; Pelling & White, 2009), literature also shows the added value for qualitative approaches when a topic seems to be underexplored (Clapton-Caputo et al., 2020). Hence, TPB is used in a qualitative way to better understand social media users' motivations.

First of all, Ajzen (1991) refers to attitudes as 'the extent to which a person has a positive or negative assessment of the behaviour'. According to Fishbein (1979), attitudes are developed from the attitudinal beliefs people have about the behaviour, and the desirability of the behaviour is weighted by an evaluation. The theory of attitudes suggests that attitudes are based on audiences' past experiences with the behaviour and that only salient beliefs come to mind, which are expected to influence the behaviour intention. Within this study, attitudes refer to the extent to which social media users assess CGI-I-engagement positively or negatively. It is expected that a person's positive attitude would positively affect someone's intention to engage. For example, positive attitudes towards CGI-I-

engagement would encourage people to engage with a CGI-I for the first time, but to a greater extent also depends on other concepts before considering long-term engagement. A negative attitude towards CGI-I-engagement will potentially result in disengagement.

Secondly, subjective norms represent individuals' perceptions of pressure from important others to perform a behaviour or not (Ajzen, 1991). Generally, subjective norms are a weaker predictor of behaviour intention than attitudes or perceived behavioural control, however this can change across behaviours. Subjective norms are unveiled by means of normative beliefs, meaning that beliefs are predicting eventual subjective norms. These normative beliefs are closely related to perceptions of social approval, as people strive to be accepted in their behaviours by their direct environment. For example, when an individual thinks their social group have positive attitudes towards a behaviour, the individual is more likely to perform the behaviour than in opposite case. When specifying subjective norms to this study, these are about a social media user's perception of what his/her significant others think of FTE, LTE, and DE with a CGI-I. I presume in general that when environments approve CGI-Is, it would have a positive effect on someone's behaviour intention. On the other hand, I expect environments with negative evaluations of CGI-Is to be demotivating for someone's behaviour intention.

Finally, perceived behavioural control (PBC) is seen as the last TPB-predictor of engagement and includes individual's perceived control of performing the behaviour. Ajzen (1991) claimed that 'the more resources and opportunities individuals believe they possess, and the fewer obstacles or impediments they anticipate, the greater should be their perceived control over the behaviour'. This signifies that the power of control beliefs predict an individual's eventual PBC.

Within this study, PBC relates to social media users' perceived control of engagement with a CGI. Three potential barriers for CGI-I-engagement might be: I). the perceived ease with which CGI-Is are identified by social media users, II). CGI-I's visibility on social media, and III). the degree to which social media users can control how much time they spend on social media platforms.

First, CGI-I-identification relates to a social media user's belief regarding the difficulty of recognizing CGI-Is. As CGI-Is are still a relatively new phenomenon, it is not likely that all respondents immediately identify the CGI-I as such, which might affect their behaviour intention. An easy identification of CGI-Is might foster someone's behaviour intention, as CGI-I's novelty might attract social media user's interest. Concrete, this identification may lead to visiting the profile of a CGI-I (FTE) or even following (LTE). On the other hand, no identification of the CGI-I might decrease one's behaviour intentions, as they are identified as all other human influencers.

A second possible obstacle for engagement with CGI-Is lies in their visibility. There is a great chance that multiple social groups never heard of CGI-Is, because of its relative novelty. For example, individuals older than 65 are less interested in social media platforms, e.g., Instagram. In that case, CGI-Is are almost invisible for this group, which results in a deficient self-regulation. On the other hand, CGI-Is might already be part of people's lives from younger generations. For instance, a millennial who



is often online at social media may be exposed to CGI-Is by means of social media algorithms. In such case, the social media user had fewer obstacles to engage with CGI-Is.

Thirdly, users' social media uncontrollability might force people to engage or not. The less control someone has on its social media time spent; the higher is the possibility that the person will be exposed to a CGI-I. In that case, one has a lot of resources and fewer barriers. On the other hand, when a social media user does control their social media time, he/she can limit their time spent on such platforms and thus engagement with CGI-Is. In that case, an individual does not have many resources to engage with CGI-Is. This perceived behaviour control is thought to be based on previous experience as well as predicted barriers (Ajzen, 1991).

In order to explore the motivational role of the TPB-concepts on CGI-I-engagement, a third sub question is established:

*S3: What attitudes, subjective norms, and perceived behavioural control play a role in social media users' engagement with a computer-generated imagery-influencer?*

A fourth sub question on TPB with regards to the AIG-I is not developed as these concepts. This is expected since attitudes, subjective norms, and perceived behavioural control are assumed to be too hard to verbalize since the phenomenon does not exist yet.

## **2.6 Parasocial relationships**

The activity of viewing celebrities via mass or mediated communication creates media users' social reality (Alperstein, 1991). This phenomenon of developing a perceived bond with a celebrity is also known as a parasocial interaction (PSI) and is especially applied in media studies. Horton and Wohl (1956) introduced this phenomenon as assumed outcome of emerging mass media channels within the fifties, such as broadcast television and radio. Their definition of a PSI is: 'a conversational give and take during viewing' (Horton & Wohl, p.215). In this definition they assume media users to perceive a PSI as a heart-to-heart reciprocal interaction. At the same time, they noticed that PSIs only include one-way communication, no sense of responsibility at audience side, and a free choice of following or withdrawing anytime in the relationship without being noticed by the performer.

According to a more recent article, PSI is defined as a fictitious sensation of shared awareness which can only emerge while being exposed to a performer (Dibble et al., 2016). Since PSI is defined as concept which only takes place during a certain activity, it is clearly distinguished from a long-term interaction (Rosengren et al., 1976). In other words, this PSI will evolve into a parasocial relationship (PSR) when interactions become more enduring longitudinal connections. However, this is not the case according to Rubin et al. (1985), who defined PSI extensively as 'interpersonal social involvement', including various stages of long-term and short term interactions. Though, in general, PSRs are described as one-way enduring emotional, and psychological connections between audiences and

celebrities (Bond, 2016, 2018; Yuan & Lou, 2020). Regardless of the phenomenon's definition, literature asserts that PSIs and PSRs can have multiple positive outcomes for people and organizations. For example, PSRs are found to be helpful in people's mental health by providing interpersonal needs to lonely humans through mediated communication (Escalas & Bettman, 2017).

Furthermore, PSRs are found to be positively influencing a person's attitudes and intentions towards an object (Tsai & Men, 2013). Nowadays, frequent exposure of a media user to a performer provides interesting commercial opportunities for brands, since intimate bonds affect a person's way of thinking and thus decreasing their persuasion defence mechanisms, whether via a PSR or physical connection (Bond, 2018). This means that social media users are more susceptible to an advertisement of their followed celebrities, who are sponsored by brands, which are using influencer marketing as tool (Horton & Strauss, 1957). I assume these claims, related to PSRs and PSIs, to be applicable within CGI-Is as well. The following section will discuss possible drivers regarding PSIs with CGI-Is.

### **2.6.1 Drivers of parasocial interaction**

As previously described, indicators of influencer engagement (PSI) are very often interpersonal and psychology related. Hence, in order to provide this study a sophisticated prediction of CGI-I-engagement drivers, the most relevant concepts are taken into account. Literature showed that the degree of perceived homophily and loneliness are important drivers of PSIs (Turner, 1993; Wang et al., 2008), which are also found to be the most relevant concepts with regards to CGI-I-engagement.

Loneliness was found to be the most important driver of PSIs (Lim & Kim, 2011). Besides the theoretical arguments for including loneliness, younger generations in current society are currently subject to a loneliness epidemic, which became more visible than ever during the COVID-pandemic (Cigna, 2018; I&O Research, 2020). According to Appel et al. (2020), combatting loneliness will become more and more a problem in the near future. Social media were originally seen as solution for loneliness – however – the outcomes seem paradoxical; scholars show the negative effects of heavy social media usage on feelings of loneliness. This also assumes there is a potential link between loneliness and PBC-factor social media addiction since uncontrollability of social media time will increase feelings of loneliness. Moreover, it is found that loneliness closely links to UGT-factor boredom, since a lack of contacts also leads to an extra amount of time (Russel et al., 1978).

In the context of this study, loneliness is seen as a potential driver of CGI-I-engagement, since younger generations are also seen as prominent target group of CGI-Is. Loneliness is defined as 'an experienced discrepancy between the kinds of interpersonal relationships the individual perceives himself as having at the time, and the kinds of relationships he would like to have, whether in terms of his past experience or some ideal state that he has actually never experienced' (p.274) (Sermat, 1978). Media are expected to be a substitute for physical interpersonal connections, when an individual has a lack of social contacts (Rubin et al., 1985). Literature suggests multiple underlying reasons may cause a shortage of contacts, e.g., related to one's personality, social skills, or feelings not to belong (Escalas

& Bettman, 2017). These factors are perceived to be drivers of such PSI in order to fill social needs and diminish loneliness. Wang et al. (2008) investigated dimensions of loneliness and came up with the following ones: emotional, social, chronic, situational, and transient loneliness. ‘Emotional loneliness’ refers to too few intimate bonds with family and a lover, which cannot be repaired by establishing more relationships. ‘Social loneliness’ delineates a general lack of social networks, bonds, or acts, which becomes a ‘chronic loneliness’ when there is a longitudinal absence. ‘Situational loneliness’ is caused through an abrupt deficiency of social contacts, and ‘transient loneliness’ refers to the occasional experience of missing social contacts. This study on CGI-Is will investigate whether loneliness affects engagement with CGI-Is. If that is the case, it will be distinguished what dimensions of loneliness apply.

Secondly, perceived homophily relates to similarities between the source and receiver within interpersonal communication (Rogers & Bhowmik, 1971). These resemblances are assumed to increase the degree of interaction and interaction effectiveness. McCroskey et al. (1975) executed a qualitative study in which they investigated if students would have significantly more interaction when having multiple similarities with the other. This research identified attitude, morality, appearance, and background homophily as drivers of increasing interaction levels. Within this study, ‘attitude homophily’ refers to the degree to which there is similarity in CGI-I’s and consumer’s attitudes. ‘Morality homophily’ includes resemblances between CGI-I’s and consumer’s morals, values, emotions, and politics. Further, ‘appearance homophily’ refers to similarities in physical appearances, and last but not least, ‘background homophily’ picks up on the degree of correspondence in social class, culture, and financially between CGI-I and social media user. Successive scientific research found that attitude homophily contains the highest explained variance of all (Turner, 1993). This is confirmed in recent literature, wherein scholars investigated the positive influence of perceived homophily on parasocial interactions (Sokolova & Kefi, 2020). Remarkably, appearance homophily did not show a strong relationship. However, appearance homophily will be considered within this context, since it is related to CGI-I’s appearance instead of humans, which could obviously trigger other outcomes. Hence, aforementioned four dimensions of perceived homophily are subject to investigation within data collection.

Since the possible effects of loneliness and perceived homophily on CGI-I-engagement remained underexplored in literature to date, this study will explore whether or not there exist connections. This results in the development the fourth sub question:

*S4: What motivational role do perceived homophily and loneliness play in social media users’ engagement with a computer-generated imagery-influence?*

Similar to the concepts of the Theory of Planned Behaviour (2.5), no sub question will be established for AIG-Is since this phenomenon does not exist yet.

## 2.7 Motivational framework

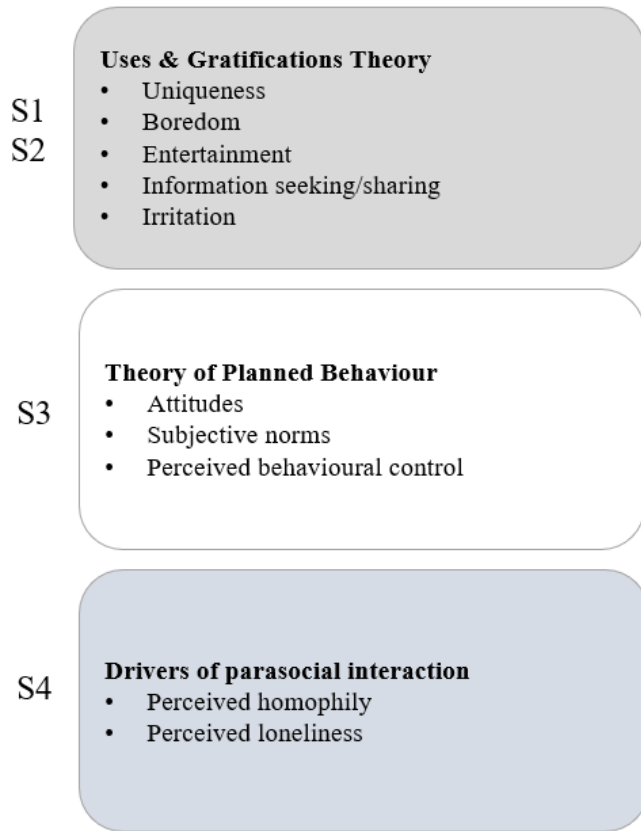
Scholars have consensus on the close relationship between motivations and engagement (Coyle & Newman, 2012; Piccolo et al., 2014). Motivation is seen as an antecedent of engagement on SNSs (Dolan et al., 2016). In other words, consumer engagement (CE) is the outcome of underlying motivational mechanisms. In order to explain CE with CGI-Is, this study will address potential motivational drivers, resulting in their intentions to engage, and in their engagement with CGI-Is. CGI-I-engagement is assumed to be mainly a conscious action since it is considered to be a mostly high-involvement task. In order to clarify current study's perspective on CGI-I-engagement, a conceptual model is provided with all expected motivational drivers included.

This conceptual model includes a list of possible motivational drivers affecting CGI-I-engagement. Enclosed motivational drivers mainly derive from the *Theory of Planned Behaviour* (TPB) and *Uses and Gratifications Theory* (UGT). In addition, drivers of PSIs, perceived homophily and loneliness, are taken into account, since literature appointed these two factors as important in the construction of PSRs. Further, this study expresses engagement in three distinctive target behaviours: FTE, LTE, and DE. FTE relates to the first time a social media user visits the Instagram profile of a CGI-I, whilst LTE refers to following an account. Finally, and the opposite of prior target behaviours, DE is chosen as target behaviour in order to investigate demotivational drivers, leading to negative behaviours, e.g., refrain from following or unfollowing.

Literature only sporadically combined UGT and TPB due their distinctive origins, such as in recent study to understand music streaming intentions and behaviour (Kinnally & Bolduc, 2020). Within this study on music streaming, they concluded that UGT drivers are beneficial in broadening the traditional TPB in state-of-the-art innovations. This might also apply to the innovative CGI-Is and AIG-Is. Pujadas-Hostench et al. (2019) integrated the same models in order to predict online purchases on SNSs (Appendix B). As their model accepted seven out of eight hypotheses, it can be assumed that the model provides enough evidence to integrate TPB and UGT within one framework. In addition, they found out that UGT drivers mainly influenced attitudes and, however contradicted by Kinnally and Bolduc (2020), behavioural intentions. The conceptual model, as shown in figure 2, has been developed by means of TPB, UGT, and drivers of PSIs in order to interpret drivers of engagement with CGI-Is.

**Figure 2**

*Conceptual model of potential antecedents of engagement with CGI-Is and AIG-Is*



This model provides current research with my own perspective on this case and contributes to the interpretation of this study's outcomes. A full overview of all sub questions is provided within table 2.

**Table 2**

*Overview sub questions*

Sub question	
S1	What are social media users' media needs that lead to engagement with a computer-generated imagery-influencer?
S2	What expectations do social media users have of their media needs that affect engagement with an artificial intelligence generated-influencer?
S3	What attitudes, subjective norms, and perceived behavioural control play a role in social media users' engagement with a computer-generated imagery-influencer?
S4	What dimensions of loneliness and perceived homophily play a role in social media users' engagement with a computer-generated imagery-influencer?

### 3 Methods

This study conducted interviews in order to understand drivers of engagement with CGI-Is and explore expectations of AIG-Is. Interviews were semi-structured as this technique featured both structure and flexibility during conversations (Boeije, 2010). This allowed the interviewee to talk freely. This design contributed to a rich and informative qualitative research data set (Adami & Kiger, 2005). This chapter introduces the participants interviewed and the method of recruitment. Further, the procedure is elaborated after which the data analysis is discussed.

#### 3.1 Participants

A convenience sampling strategy has been executed in order to recruit participants. Potential candidates who showed engagement with a CGI-I (like, comment, or follow) were targeted via Instagram. Eventually, 29 people were interviewed, aged 25 on average ( $SD = 7.45$ ). In total, 17 participants identified themselves as female (59%) and 12 as male (41%). Interviews were held with people from 14 countries across Asia, Africa, Europe, North America, and South America. From all participants, 13 people (45%) engaged with a CGI-I from a professional perspective and 16 respondents (55%) engaged out of personal interest. Professionals were employed in marketing, communication, or design areas (e.g., copywriter or 3D-animator) or engaged with CGI-I as a former or potential client. Most people of this group were Dutch and followed Esther Olofsson. Within the data collection phase, it appeared that these two groups had very different drivers to engage with a CGI-I. Therefore, the results section will separately discuss the results of both.

Participants were asked about their highest completed education. The majority of the respondents (52%) completed high school, whilst 11 people (38%) completed a bachelor's degree and three people (10%) obtained a master's degree. Instagram is the most popular social platform among respondents (96%), followed by Facebook (35%) and TikTok (31%). Interviewees estimated their average social media usage at 20 hours a week ( $SD = 9.78$ ) and engaged with Lil Miquela, Imma Gram, Knox Frost, Shudu Gram, Here is Rae, Esther Olofsson, or Plustic Boy. Besides CGI-Is, people preferably followed influencers from industries such as entertainment (55%), fashion (38%), or lifestyle (38%). Further, inspirational content and comedy were often named as favourable areas on Instagram.

As mentioned, participants have been recruited via Instagram, since the platform aligns with the visual aspects of CGI-Is and is the most popular medium among the target group of CGI-Is (Irimescu, 2022). Subsequently, potential interviewees were contacted via Instagram-accounts of CGI-Is to make sure they are CGI-I-followers. Therefore, a pre-selection of CGI-Is was made, inspired by the website [virtualhumans.org](https://virtualhumans.org). This website listed 186 digital characters on social media, based on numbers from 19 October 2021. However, not all characters complied to the definition of a CGI-I. All characters not possessing a humanlike appearance and humanlike personality were excluded from selection. For example, the Instagram-character Nobody Sausage was not listed for recruiting participants, despite

having 4.4 million followers on Instagram. Appendix C provides an example of this consideration. This condition reduced the amount of accounts to 76 and Appendix D gives an overview of the first 20 approved CGI-Is. All accounts possessed at least 10.000 followers. Interviewee selection started with the most followed CGI-Is until the CGI-I with the least number of followers. After the selection of CGI-I-accounts, people were recruited via the CGI-I's followers list. People who commented on posts or liked posts of a CGI-I were contacted as well. Participants needed a public account to be able to send a direct message. The recruitment message can be found in Appendix E. Most often the profile was quickly scanned on demographics. As soon as the person accepted the invitation, an appointment for the interview was jointly arranged.

### **3.2 Procedure**

The interview sessions took place between November 29 (2021), and June 6 (2022) in an online setting due to practical considerations. Software programme Microsoft Teams has been used in particular for privacy considerations and its recording software. At the beginning of each interview, it was emphasized that participant's anonymity and confidentiality in processing the data was assured in line with GDPR legislation. Subsequently, the interviewee was asked their informed consent to participate in this research and their permission was asked for recording the conversation. Recordings started after oral agreement. Before the start of the data collection, this procedure was approved by the Ethics Committee of the University of Twente.

All interviews started with an introduction of the researcher, including the background and how this research was established. Then, participants were invited to introduce themselves in order to gather all necessary background information. The interview continued with introductory questions about people's social media usage, e.g., which platforms they use, how much hours per week they use social media, and for how long they follow the CGI-I. To finalize this part of the interview, participants were asked to define a CGI-I in order to analyse the perceived characteristics of CGI-Is.

The second part of the interview focused on substantive questions related to drivers of engagement with a CGI-I. First, it was questioned how the respondent came across the account and their drivers to visit the Instagram-page for the first time. Secondly, interviewees were asked why they eventually followed the account and whether or not this differed from their first page visit. By means of probing, participants were supported to retrieve the exact moment. Finally, people were asked about their negative experiences with CGI-Is and whether or not they showed negative behaviours towards the account. If this was not the case, they were asked what would trigger their disengagement.

The third part considered the currently non-existent AIG-I, wherein respondents were asked about their expectations of the new phenomenon. First, interviewees were provided with researcher's definition to provide them with the needed information about the futuristic phenomenon. Topics were similar to the CGI-I-part; however, it was expected that respondents could not accurately verbalize the

role of attitudes, subjective norms, perceived behavioural control and PSIs as drivers of AIG-I-engagement. Hence, these sections were omitted.

Respondents were exposed to open-ended questions, and the researcher tried to probe the respondent as much as possible in order to maximize the amount of new data. However, it is possible that respondents left out important things, presented them in a preferred way, or were not able to verbalize their perceptions. On average, interviews took approximately 45 minutes and were held in English or Dutch.

A shortened topic list can be found in table 3, while a full description is provided in Appendix F. Two concepts were otherwise defined than literature suggested since this study's results indicated another perspective on attitudes. Attitudes were seen as evaluation of people's first time engagement (FTE), rather than beliefs about the requirements for engaging with CGI-Is and the results of that behaviour. Besides, identification refers to both a possible control belief (4.3.1) and to a driver of LTE (4.4.1).

**Table 3**

*Abbreviated Topic list*

Part	Topic	Subject	Example question
1	Activity on SNSs	Activity on SNSs Interaction on SNSs	- What social media platforms do you use? - For how long are you following this CGI-I?
2	Definition CGI-Is	Perceived CGI-I characteristics	- How would you define a CGI-I?
3	Gratifications from CGI-Is	Media needs CGI-I gratifications	- What needs do you have regarding CGI-Is?
4	Attitudes towards CGI-I-engagement	Attitudinal beliefs	- What advantages or disadvantages do you perceive from CGI-I-engagement?
5	Subjective norms on CGI-Is	Normative beliefs	- To what extent do you feel social pressure from important referents to engage or not with a CGI-I? Why?
6	Perceived behavioural control on CGI-Is	Power of control beliefs	- When did you recognize the CGI-I as such?



			<ul style="list-style-type: none"> <li>- Do you think CGI-Is are visible? Why?</li> <li>- Do you control your social media usage?</li> </ul>
7	Drivers of PSIs	Perceived homophily Loneliness	<ul style="list-style-type: none"> <li>- What similarities between you and this CGI-I influence engagement?</li> <li>- What role have CGI-Is in decreasing feelings of loneliness</li> </ul>
	Expectations of AIG-Is*	Perceptions Engagement drivers	<ul style="list-style-type: none"> <li>- How does an AIG-I differ from a CGI-I in your perception?</li> <li>- What drivers would possibly contribute to your engagement?</li> </ul>

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\* Before discussing the topic of AIG-Is, an introduction is provided by the researcher. The introduction was: “A self-guiding program which is associated with a celebrity status on social media and utilizes algorithms in order to create a persona which represents the target group and to post attractive and profitable content for the target group”

### 3.3 Data analysis

After conducting all interviews, recordings were transcribed and coded. Since interviews were held online via Microsoft Teams, the recording devices were used as input for transcriptions. These files were automatically transcribed via software from Amberscript after which the data was coded in Microsoft Excel. A deductive thematic analysis was used, wherein aforementioned conceptual model served as initial codebook, which is visualized in table 4. Inductive coding was applied as well – besides deductive coding - since analyses gathered new codes and led to code proliferation.

A first round of data analysis was executed after the fifth interview to ensure the accuracy of the first version of the topic list. This analysis resulted in changes within the structure of the initial codebook. Instead of going through the theoretical concepts as described in table 4, the codebook was split up by means of: FTE, LTE, and DE. This resulted in a clear overview with all the drivers across the distinctive target behaviours.

**Table 4***Initial codebook*

Category	Description	Source
CGI-I perception	Statements about the perception of CGI-Is	(Rosen et al., 2013)
Uniqueness	Statements about the uniqueness of VIs	(Croes & Bartels,
Boredom	Statements about the boredom social media users experience	2021; Kinnally & Bolduc, 2020)
Entertainment	Statements about the factor entertainment as driver of engagement	
Information seeking/sharing	Statements about information sharing/seeking function motives	
Irritation	Statements about irritating factors that lead to negative engagement	
	Statements about sponsorship disclosure that lead to negative engagement	(Zhang et al., 2020)
Identified behavioural beliefs	Statements about the evaluation of first time engagement	
Identified normative beliefs	Statements about the subjective norms affecting engagement	(Pelling & White, 2009)
Identified control beliefs	Statements about the perceived behavioural control, affecting engagement	(Pelling & White, 2009)
Social media engagement	Statements about perceived social media engagement, affecting engagement	
Visibility	Statements about perceived visibility of CGI-Is, affecting engagement	
Identification	Statement about identification of CGI-Is as driver of engagement	
Perceived homophily	Statements about similarities between them and CGI-I, leading to engagement	(McCroskey et al., 1975; Wang et al., 2008)
Loneliness	Statements about loneliness, affecting engagement with CGI-I	
AIG-I perception	Statements about the perception of AIG-Is.	(Rosen et al., 2013)

After reconstructing the codebook, the other 24 interviews were analysed. In order to limit the number of codes, more accurate words were used, codes were merged, and infrequent codes were examined simultaneously with the analysis (Boeije, 2010). After this first round of data analysis, axial coding was applied in order to find connections between and within categories. In the end, a selective coding-procedure was executed to translate codes into themes.

This resulted in the establishment of 66 codes. In order to secure the reliability of the designed codebook, a second coder was assigned to analyse at least 10 percent of the data. Three out of 29 transcriptions were randomly selected and coded by an independent volunteer. In order to measure the intercoder reliability, Cohen's Kappa was used. Subsequent analysis showed that the codebook has at least substantial agreement. ( $\kappa = .65$ ), as described in table 5. Discrepancies between the assigned codes were discussed with the second coder. Despite some fragments being coded differently, changes within the codebook were not found to be necessary. The analysis is visualized within Appendix G.

**Table 5**

*Intercoder reliability measurement by means of Cohen's Kappa*

	Value
Cohen's Kappa	.65
N of valid cases	33

## 4 Results

This study provides advertising brands with first insights into their consumers' drivers to engage with CGI-Is. Firstly, perceived characteristics of CGI-Is are discussed. In addition, section 4.2 elaborates on how people were exposed to CGI-Is. The following three sections (4.3 until 4.5) describe which drivers were found of first time engagement (FTE), long-term engagement (LTE), and disengagement (DE), whilst expectations of the AIG-I can be found in section 4.6. Besides the target group of CGI-Is, interviews were also conducted with professionally involved people. This group appeared to have other intentions and thus drivers to engage with CGI-Is. Hence, these drivers are separately discussed within Appendix H.

### 4.1 Perceived CGI-I characteristics

At the beginning of each interview, respondents were requested to define the CGI-I. Most often (28%) they came up with the characteristic of the CGI-I being a non-existent influencer since people identified their digital origins in relation to their persuasive character. This is illustrated with the following statements:

[1] *"A virtual influencer would be a non-existent person that influences the opinion of their followers. Obviously, you cannot meet the person and shake their hand, right? And they probably wouldn't have a mind of their own, so they are pretty much a puppet, I suppose..."* (P. 13, male, about Here is Rae)

[2] *"I would say virtual influencers are kind of characters, such as Mickey Mouse and everyone. So, it's just a reiteration of that. But on a large – influential – scale I would say it is a place to promote products."* (P. 15, male, about Lil Miquela)

CGI-Is' human appearance had also been mentioned regularly (25%) as a prominent characteristic. However, respondents did have different feelings about the human lookalikes, ranging from being fascinated to scared. This discrepancy can be seen in the definition given by participants seven and 22:

[3] *"The whole concept of taking - something that's already so popular - vlogging and selfies to a whole new level is fascinating. Trust me, building a character that looks so good takes four or five programmes to render and sometimes even take weeks for one photo."* (P. 7, female, about Imma Gram)

[4] *"Bizarrely realistic and scary. This online person looks so real... Then I get the feeling that people could really manipulate you. If you think about that... It's kind of scary."*  
(P. 22, female, about Esther Olofsson)

These results show that human appearances applied to CGI-Is were assessed differently between respondents. These contradicting answers may be caused by the differences in appearances of Imma Gram and Esther Olofsson as the latter is perceived as less realistic in general. Hence, it can be argued that realistic human appearances are evaluated more positively.

Another important prerequisite for a CGI-I – named by respondents – is that CGI-Is' accounts are being controlled (25%). According to participant four they behave 'culturally appropriate' and 'politically correct'. Some respondents saw this characteristic as the only difference with human influencers:

[5] *"To me it's just a normal influencer, like any other, but a virtual influencer is controlled by people behind the scenes. A human influencer only shares his own experiences."*

(P. 21, female, about Esther Olofsson)

This statement suggests "controllability" of CGI-Is is a negative aspect of CGI-Is, in comparison with human influencers. It seems that CGI-Is' controllability negatively affects people's perception of CGI-I's authenticity. Hence, it is likely that people rather engage with authentic influencers which are not externally controlled on social media.

A fourth characteristic of CGI-Is is their attractive appearance (12%), which some respondents related to as 'perfect'. For example, participant two mentioned Lil Miquela's little nose, big lips, and fashionable outfits. Since a significant number of social media accounts – such as CGI-Is – manipulate their pictures to look 'perfect', participant nine suggested vulnerable groups should be excluded from social media:

[6] *"I feel very nice when I see her posts and I think we should recognize it as virtual. Shudu was made to be perfect. I think children should not spend their time on social media, because there are millions of things that can affect them, for example supermodels. I think parents have an important role in that."*

(P. 9, female, about Shudu Gram)

Attractive appearances are mostly seen as a negative consequence of social media, which was also delineated by participant nine. However, it seems that CGI-Is' attractive appearances are evaluated rather positively when recognized as virtual. Therefore, it is possible that social media users approve of attractive CGI-Is on SNSs.

Finally, respondents came up with CGI-Is' capabilities to show human emotions and tell human stories (12%). Sometimes they are perceived to be even more "real" than human influencers. This striking example is given within the following quote:

[7] *“When she goes out to eat it seems more genuine than a real celebrity. These celebrities just seem so fake like: ‘Everyone stop what you are doing. I need you to pose like this’, whereas Lil Miquela’s pictures look like it is actually happening. For example, someone was like: ‘Hey, let me take a real quick picture’, and they turned, smiled and they went back to what they were doing.”*

(P. 5, female, about Lil Miquela)

In conclusion, people within this sample perceived CGI-I’S non-existence, human lookalike, controllability, attractiveness, and human emotions/stories as characteristics. All concepts connect very well with CGI-Is, however, surprisingly few people mentioned the advertising character of CGI-Is. This is seen as a core characteristic of the phenomenon since this comprises the business model, although this study’s sample perceived this as less relevant. It can be argued that respondents mostly focused on the unique selling points of CGI-Is – being virtual – than its advertising purpose, since this is similar to traditional influencers.

#### **4.2 Exposure to CGI-I**

Participants came across CGI-Is in completely different ways. Most often they were exposed to a CGI-I via an organic social media post. For example, Instagram algorithms recommended the CGI-I-account Here is Rae to the respondent, whilst others were exposed through a TikTok-video on their “for you-page”. Besides social media, respondents also discovered CGI-Is via sponsored messages or friends (word-of-mouth). The latter is described as follows:

[8] *“My childhood friend send me a link to Lil Miquela. She really loved the person, and I was like: ‘Why do you follow her?’ When I went to her profile, I saw that it was not a real person, maybe a robot. So, I became interested why robots exist on Instagram.”* (P. 3, female, about Lil Miquela)

The majority of the respondents followed such an account for less than a year (55%). In general, this group were up to date with recent developments of the CGI-I, however, they were less informed about CGI-I’s history. In contrast, 28% of the interviewees followed a CGI-I between one and two years and 17% of the sample followed a CGI-I for more than two years.

#### **4.3 Drivers of first time engagement with CGI-Is**

The previous section described how interviewees were exposed to a CGI-I, while this part elaborates on drivers that led to first time engagement (FTE). Results showed that control beliefs (4.3.1) and media needs (4.3.2) motivated respondents to show this particular behaviour. To emphasize, only drivers of personally interested respondents are taken into account in this chapter.

### 4.3.1 Control beliefs

Interviews provided evidence that people's decision to visit the Instagram profile of a CGI-I was influenced before the actual exposure. This may be explained by respondents' control beliefs, which are expected to be *social media engagement*, *CGI-I visibility*, and *CGI-I identification*.

First, it was assumed that the higher one's social media engagement, the higher the chance to be exposed to a CGI-I and thus visiting the profile of a CGI-I. No respondent mentioned any form of addiction in relation to their social media usage. Although, they often acknowledged their usage is uncontrolled when not having responsibilities. This is illustrated with the following statements:

[9] *"If I'm really focused on doing some tasks then it's not necessary for me to have my phone with me. But if I'm bored, it is always helpful to have my phone to kill time."* (P. 6, female, about Imma Gram)

[10] *"I can lose control sometimes and it really depends on the state of my life. If I have low self-control that day, I indulge more and I let go. But I would say that most of the time I do have the control."* (P.7, female, about Imma Gram)

These quotations explain very well the different states of respondents: when having responsibilities, they control their usage easily. However, their control over their usage seems to disappear when they have to kill time. This is also supported by respondent's average usage of SNSs (20 hours a week), as previously indicated in the method section. Nevertheless, the outcomes would suggest that this sample does experience some kind of addiction, which possibly fosters their perceived behavioural control.

Furthermore, interviewees perceive CGI-Is as not visible on social media. Respondents did not consciously come across other CGI-Is, however, most of them also indicated they would not care about other accounts as well. If this would be the case, they had a certain strategy to find them:

[11] *"I usually never see virtual influencers. My Instagram is filled with other content like gym, cooking, and video editing and stuff. If I would like to search more virtual influencers, than I would Google maybe. I would search for 'top 50 of virtual influencers on Instagram.'" (P. 8, male, about Knox Frost)*

This finding would suggest that CGI-Is are only found when actively searching for them. Within this sample, a small group of people indicated to be excited to interact with other CGI-Is when they would be exposed to them on their social media timeline. Since this is not the case, CGI-I's visibility might be perceived as an obstacle for social media users to become aware of new CGI-Is and ultimately to engage with them. Furthermore, potential fans who are not aware of CGI-Is may hold back to engage

with them due to their invisibility. Thus, CGI-Is' visibility is likely to decrease one's perceived behavioural control.

The *identification of CGI-Is* was suggested as third aspect influencing people's perceived behavioural control. Within the literature review, it was speculated that a convenient recognition of a CGI-I may ease and thus foster their engagement. Surprisingly, the results show that the opposite might be true. People were generally unable to determine conclusively whether the account was human or CGI-I, which ultimately led to more engagement. The next statement describes this:

[12] *"A video on Instagram Reels made me visit her profile. She looked realistic and I thought: why is this normal person having this amount of followers? This made me click on the reels."*

(P.2, female, about Lil Miquela)

These outcomes would suggest that the identification of the account leads to less engagement with CGI-Is. Apparently, people preferred to be exposed to an account that could not be identified as a CGI-I or a human.

#### **4.3.2 Mysterious and curious**

The results also revealed drivers of FTE – informed by Uses and Gratifications Theory (UGT). These media needs seemed to be influenced by the aforementioned identification of CGI-Is. Two distinctive categories were CGI-I's mysterious origin and curiosity.

The first category includes respondents who did not recognize the account as CGI-I after being exposed. Their key driver to show this behaviour was because of its *mysterious origins*. This is illustrated by the following statement:

[13] *"A video on Instagram Reels made me visit her profile. She looked realistic and I thought: 'Why is this normal person having this number of followers? She made me click on the reels.'"*

(P. 2, female, about Lil Miquela)

This quote clearly describes respondents who noticed something odd about the CGI-I. Participant two expected the account to be a human after being exposed to it but was triggered by Lil Miquela's amount of followers. Others mentioned the "strange appearance" of the account, however not doubting the authenticity, which is the case by people who showed this behaviour out of curiosity. This might explain why social media users visit the Instagram profile of CGI-Is, despite identifying them as such.

Secondly, results show there is a group of respondents that questioned the authenticity of the account after exposure to the account. This means they did not immediately define the CGI-I as virtual influencer, but they remained in doubt. These respondents were curious and wanted to find out its origins



by visiting the profile. Their main motivation was *curiosity* about the truth: is this person real or is it fake? This is demonstrated in the following quotation:

[14] *“I was confused when I went to the profile of Lil Miquela, because I wanted to know whether she was real or fake. It made me curious to find out.”* (P. 1, male, about Lil Miquela)

In summary, the results suggest that people generally engage with CGI-Is for the first time in order to “solve the mystery” or out of curiosity. Both drivers assume non-identification to be decisive for people to interact with the CGI-I. Hence, it can be argued that CGI-Is should be hard to identify in order to optimize interaction.

#### **4.4 Drivers of long-term engagement with CGI-Is**

In the following section, drivers of long-term engagement (LTE) with CGI-Is are demonstrated. Within the interviews, respondents were exposed to open questions with regards to their following behaviour with a CGI-I. In total, six main drivers were identified: CGI-I identification, attitudes towards FTE, entertainment, information seeking, boredom, perceived similarities, and perceived loneliness. Further, outcomes assume the absence of subjective norms, which is discussed in Appendix I.

##### **4.4.1 CGI-I identification**

A majority of the respondents did not identify the CGI-I as such before visiting the account on Instagram. After this FTE, respondents were provided with new resources to recognize the CGI-I. Firstly, by analysing their *appearance*. People explained they looked closely to the pictures and were able to identify the account as such. Despite “solving this mystery”, they did not dropout. Results assume this group followed the CGI-I to seek for information, e.g., about the creators or the account. This will be discussed further in section 4.4.3.

Other people recognized the CGI-I as such through its *self-disclosure*. For example, Shudu unveils her creators within each post caption and Plustic Boy’s biography says it is a “virtual human”. The quotation of participant 16 illustrates this point:

[15] *“What made me realize that he is a virtual influencer, is actually his biography on Instagram. It's kind of hard to recognize this guy as human instead of a virtual influencer. Do you know the looks of K-pop idols? It's really similar to them. But I think it's still ethical, because it's part of the gimmick to make people question about: Is he real or not?”* (P. 16, female, about Plustic Boy)

According to the previous quote, people preferred to be informed about the CGI-I’s origins within its post captions and biography. Identification of the CGI-I made the curiosity disappear;

however, it appeared that this group still liked to start a long-term relationship with the account as a sort of entertainment. This is discussed in section 4.4.4.

There were also people who did not yet recognize the CGI-I after looking at the pictures nor by means of the CGI-I's self-disclosure. This is demonstrated by the following statement:

[16] *"I didn't recognize her as human directly. That's why I followed her: to get more information about her and to follow her stories."* (P. 1, male, about Lil Miquela)

Outcomes show that this resulted in respondents who followed the CGI-I in order to get an answer to the question: is it a CGI-I or a human? This assumes that this group would dropout when they identify the account as such.

#### **4.4.2 Positive attitudes**

As illustrated in the previous section (4.3), drivers to engage with a CGI-I for the first time are expected to be multifaceted and rely on non-identification. Ultimately, respondents visited the profile page of a particular CGI-I, after which they identified it or not and – probably automatically – evaluated their action. Results show that a positive attitude towards their FTE fostered subsequent actions. Five distinctive evaluations are identified: positive vibes, confusion and excitement, uncomfortable feelings, high quality content, and realistic content.

Firstly, positive attitudes of respondents were explained through CGI-I's *positive vibes*. This construct includes – hardly retrievable – factors that led to a nice energy. For example, people named CGI-I's mental stability and culture as important conditions to create this mindset. This is illustrated with the following statement:

[17] *"I know she does not always answer my questions, but she is never negative in any of her posts. She does not post anything about a depression or something... It is always positive."*  
(P. 5, female, about Lil Miquela)

Secondly, *confusion and excitement* resulted in a positive attitude. On the one hand, people were confused about the origins of this account, while on the other hand they were impressed by their contents. This sometimes led to uncomfortable feelings in combination with a drive to know what is behind the account:

[18] *"This situation makes me feel a little bit uncomfortable watching the virtual influencers trying to do human things, but it is kind of weird and I keep following her because I want to see what is behind all this. So, also positive in a certain way?"* (P. 2, female, about Lil Miquela)

This quote illustrates very well that some people still doubted about the account's origins, even after visiting CGI-I's profile page. These perceptions resulted in *uncomfortable feelings* which – surprisingly – did not result in a negative attitude towards the FTE. Participant two, eventually, followed Lil Miquela, which assumes that social media users prefer to “solve the mystery”, rather than showing disengagement due to uncomfortable feelings.

Another aspect which led to a positive evaluation of the profile, was CGI-I's *high quality content*. This argument was often given by interested professionals, who thoroughly assessed the pictures of the account. For instance, one respondent evaluated the page visit as positive, since he liked “how the picture was taken” and “looked at every little detail”. Another respondent mentioned the high quality lighting in the post of Here is Rae. Therefore, the visual aspects of CGI-Is are perceived as a relevant aspect in the positive evaluation of the FTE.

The high degree of *realism* in posts resulted in a fifth and last distinctive evaluation. Respondents liked the way the CGI-I was profiled in its timeline and especially the posts wherein they do ‘realistic’ activities:

[19] “*It also looks like someone would do as well. So, I think it's not really about influencing, but it's more about an expression of art.*” (P. 13, male, about Here is Rae)

This statement suggests people like to see CGI-Is doing humanlike activities, despite their virtual origins. Others mention that the account “comes across as a real person” and “looks normal”. Apparently, people feel these needs since they are interacting with an account which has humanlike characteristics as well. It could be that realistic activities made the account more accessible for people since influencers normally post photos of themselves buying expensive products or having holiday on luxurious islands such as Ibiza. Moreover, non-realistic activities might fake CGI-Is even more. Hence, it is likely that CGI-Is are evaluated more negatively when showing non-realistic activities.

#### **4.4.3 Information seeking**

Respondents were asked to retrieve the moment they followed a CGI-I and what needs were gratified by pushing the follow button. Results show three main categories of UGT-based LTE-drivers: information seeking, entertainment (4.4.4), and boredom (4.4.5).

*Information seeking* is found to be the most relevant UGT-driver behind people's LTE. The concept comprises a process of learning something from others. Two distinctive subcategories were identified within information seeking: *authenticity* and *creators*. In some cases, respondents explained they followed the CGI-I in order to answer the *authenticity*-question of the account, when this did not became clear during the first page visit. According to the next respondent – who followed more CGI-Is besides Here is Rae – it was intended to keep the Indonesian CGI-I Thalasya a secret and making it impossible to identify the account as CGI-I:

[20] “*I followed her account to get more information about her, because I wanted to know whether or not she was real. And I remember that she did not really show her face in the beginning. So, nobody could identify her as human or virtual influencer.*” (P. 14, female, about Thalasya)

This finding also relates to curiosity, which was discussed as motivator of FTE (4.3.2). Although, these concepts are not perceived as identical. Interviewees are expected to visit the CGI-I’s profile in a split second, thus being an unconscious driver, whilst participants are assumed to follow the CGI-I rather consciously in order to seek for information. Nevertheless, it can be argued that curiosity and seeking information about the account’s origins are closely related to each other.

Furthermore, respondents followed a CGI-I in order to seek information about the *creators*, which are mostly brand managers or marketing agencies. This is illustrated by the following statement:

[21] “*I am interested in the persons behind Shudu and why they brought up the idea to influence with her. I would like to connect with Shudu because it's different from what I'm used to. I think that's just a thing in human nature that makes me want to see what's coming next.*”

(P. 12, female, about Shudu Gram)

As described by participant 12, people like to engage with CGI-Is in order to seek information about the creators behind the account. Participant 11 expected only one person to be behind the account as he defined the CGI-I as “a concept in the mind of the creator”. This shows he had no clue about the team of marketers and digitally savvy creators. It is likely that people hold these ‘romantic’ thoughts of small-scale projects in order to approve one's own social media behaviour.

From the people who followed a CGI-I to seek for more information, all had positive attitudes towards CGI-I engagement. Therefore, it can be argued that people’s need to seek for information was driven by these positive evaluations.

#### **4.4.4 Entertainment**

This study’s results revealed that people follow CGI-Is for *entertainment* purposes as well which means people see their engagement as a way to have a good time. This concept comprises hedonic motivations and distinguishes four subcategories: *inspiration*, *escape from reality*, *technological advancements*, and *idolization*.

First of all, people liked to follow CGI-Is to gain *inspiration* from a personal interest. For example, following the account provided an amateur photographer with inspiration:

[22] “*To be honest, when I noticed he was unique, I followed him for the main reason of getting ideas out of his pictures.*” (P. 8, male, about Knox Frost)

Others use the content of CGI-Is to explore physical places they do not know yet. Once, an interviewee told she went to a restaurant because a CGI-I visited that place. This is an interesting development as people take inspiration from the virtual CGI-Is for their physical life, meaning reality and virtuality is blurring more and more. Apparently, CGI-Is have enough trustworthiness to make people follow their advice, despite not having their own experiences with their recommendations. Based on this result, it is assumed that CGI-Is have a similar level of trustworthiness as human influencers.

The interviews also showed people followed a CGI-I in order to *escape from reality*. This is possible for them since these accounts have a general purpose to entertain people. Moreover, it is also appreciated that CGI-Is do not partake in politics or ‘simple melodrama’. Once, a participant made a comparison between following a CGI-I and watching a movie:

[23] *“It is an escape from reality. Like you are watching a movie you do not like, but you keep on watching. Like it is disgusting, but you enjoy it. It is weird.”* (P. 2, female, about Lil Miquela)

Another interviewee drew a parallel with going to a circus:

[24] *“I never see negativity because that's why people start following. You won't go to a circus to be unhappy, right? So, you go to a circus because you know it's going to be a happy thing. If I come across a virtual account, I just see that as a fun thing or a way to escape from reality.”*  
(P. 15, male, about Lil Miquela)

According to the previous quotes, people follow CGI-Is in order to escape reality. The fact that these accounts do not share their political views or melodrama is seen as a condition in order to get away from the real world. These ‘real world problems’ are something human influencers have to deal with, as they share personal and societal trouble by means of self-disclosure. Persons who engage with CGI-Is do not expect to see ‘real life’ problems when looking at their Instagram Reels or Stories. Hence, social media users rather interact with CGI-Is than human influencer in order to “escape from reality”.

*Technological advancements* are seen as the third subcategory of entertainment, thus as antecedent of following a CGI-I. This concept includes anything related to state-of-the-art technology: from the virtual appearances till their stories and blending the real and virtual world. As previously indicated, future technology would be able to refine virtual appearances even more, which is supported by this group of people. This argument is demonstrated with the following quotation:

[25] *“The first thing that came in my mind when I went to the profile of Imma Gram was 'cool'. It's cool because we are progressing in science on this stuff of AI and virtual influencers. I immediately followed.”* (P. 17, male, about Imma Gram)

This concept of technological advancements also seems to be closely related to a novelty aspect, which assumes people might unfollow CGI-Is when they go out of fashion. Hence, interviewees are not expected to keep following the CGI-I when they do not keep up with recent innovations and refuse to reinvent themselves.

Further, respondents followed CGI-Is because they *idolized* the accounts. This status is gained through several characteristics that apply to human celebrities. For example, one respondent explained he followed Lil Miquela because of her own music, whilst another participant followed her to find out more about her story and personality. According to another interviewee – who followed Plustic Boy – he is even compared with human K-pop idols, which is illustrated as follows:

[26] *“If you see some type of idols on Instagram, I think that’s the closest thing to him. He really looks like those South-Korean K-pop idols. So, I think that’s the reason why people are following him, and he is for some people handsome as well I think.”* (P. 16, female, about Plustic Boy)

This result suggests that CGI-Is can possess a similar status as human influencers in relation to idolization. Followers apply qualities of the CGI-Is to the image they see and subsequently interact with them. For example, some interviewees saw Lil Miquela as idol, since they liked her music on Spotify. CGI-Is may be admired as musicians and models and thus perceived as experts in particular branches, despite only living online. Hence, social media users are expected to apply a similar level of trustworthiness to CGI-Is as celebrities. This would assume that social media users do not mind whether they follow a CGI-I or a human influencer.

To conclude, these entertainment driven concepts are assumed to be affected by positive attitudes (mentioned in 4.4.2). People who had positive evaluations of visiting the Instagram profile (FTE) were most often inclined to follow (LTE) the CGI-I for entertainment-purposes. Therefore, a connection between those concepts is likely.

#### **4.4.5 Boredom**

Besides information seeking and entertainment purposes, respondents indicated boredom as the last UGT-driven motivation to follow CGI-Is. As described within 4.3.1, respondents’ average social media usage is 20 hours per week, however, the majority did not define themselves as being addicted. Overall, participants felt they control their usage when they needed to get things done. Though, interviewees did admit they use social media a lot in order to kill time.

These respondents were well-informed about the phenomenon itself and had no interests in learning more about the background of CGI-Is. One respondent explained he followed the account Here is Rae as he likes to watch the posts when he is bored. Generally, these respondents would not identify

themselves as “hardcore-fan”, instead, they like to consume the content of CGI-Is to kill time. This is described with the following quotation:

[27] *“I don't feel like I need to look at them every day, cause I don't think I'm a hardcore fan or anything. I go through the posts to kill time. The same feeling as when I read fashion magazines, I would say. I just purely enjoy her posts, which is the same concept as when I'm following real life influencers.”*

(P. 6, female, about Imma Gram)

According to this study's results, social media users like to consume CGI-I contents when bored in order to keep themselves busy. Opening Instagram in order to kill time may be a subconscious response, as people know they can find new content which makes them calm down. Further, these interviewees like to have fun at the same time. Hence, it can be argued there is a close connection between boredom and entertainment.

#### **4.4.6 Perceived similarities**

Previously, information seeking, entertainment, and boredom were identified as UGT-driven antecedents of following a CGI-I. The interviews also showed respondents who followed a CGI-I for another reason, which is attributed to influences of parasocial interactions (PSI) and eventually resulting in a close bond with a CGI-I, also known as a parasocial relationship (PSR).

If people followed a CGI-I out of personal considerations, they were asked to what extent they thought the two drivers of PSIs would affect their following behaviour with a CGI-I. First, participants were requested to reflect on correspondences with a CGI-I, covering the concept of *perceived similarities*. It was intended to investigate whether perceived similarities influenced engagement. However, verbalizing the effects of these similarities seemed to be too difficult a task in relation to one's engagement with CGI-Is. Therefore, it was only inquired whether or not people could notice similarities, since literature assumed this to drive engagement. Most respondents mentioned resemblances with their *lifestyle*, which extends the concept of background similarities. This concept is defined as a particular way of living, taking into account how people behave, but also their working environment, living environment, and leisure activities. An example is given within the following statement:

[28] *“I think lifestyle wise we have similarities. I like going to art exhibitions as well, you know, and also hanging out with friends. I think that's what we have in common...”*

(P. 16, female, about Plustic Boy)

Besides lifestyle, respondents also mentioned a resemblance in *morality*, which comprises their values, emotions, and political preference. One respondent explained he has the same morality as Lil

Miquela, since they both try make the world a better place. Another example of correspondence in morality is demonstrated by the following quote:

[29] *"I would say that we share our fun with memes. However, he posts memes and I just comment you know. But there is this shared feeling for comedy and stuff you know."* (P. 8, male, about Knox Frost)

Interesting is that several interviewees found similarities between their own and CGI-I's *appearance*. This comprises both their physical appearance (e.g., tattoos) and their clothing style (e.g., wearing a cap). Once, a respondent was able to identify one specific similarity in appearance, being the gap in the teeth of Lil Miquela. Others mentioned to have a similar fashion style as the CGI-I. One male elaborated that he would definitely like to dress like Imma Gram and dyeing his hair another colour:

[30] *"I kind of share the same concept as Imma Gram. Like if I were her, I would also like to dress like her. Maybe putting my hair into another colour."* (P. 11, male, about Imma Gram)

It was expected that respondents would find it even more difficult to see similarities between themselves and CGI-Is than with human influencers, although seem to be similar. Possibly, the participants' fascination of the CGI-Is made them look thoroughly to the pictures and thus were able to mention so many similarities. Hence, I assume appearance similarities to be more important for CGI-Is than for human influencers.

Finally, two respondents found a similar *attitude* with a CGI-I, even though, this was in general hard to verbalize for people. This is demonstrated with the following quotation:

[31] *"It's hard to say whether or not my attitude is similar to Rae's, because we don't know how she behaves. She is not on camera and in real life, so there is no interaction."*  
(P. 13, male, about Here is Rae)

Lifestyle similarities were mentioned most often, followed by appearance, morality, and attitudinal similarities. People who perceived similarities with a CGI-I were positive towards CGI-I-engagement. This would assume a connection between those concepts.

#### **4.4.7 Perceived loneliness**

Alongside perceived similarities, respondents were asked to what extent they felt *lonely* during the period of time they interacted with a CGI-I. Results show that only a few participants dealt with hard times in relation to their social connections. Most often loneliness was caused by too few intimate bonds with family. This *emotional loneliness* is described as follows:



[32] “*Most of my family is dead and another side of the family doesn't know I'm existing. So, my friends are my family.*” (P 7, female, about Imma Gram)

This quote illustrates a person who felt lonely because she lost loved ones, however, did not connect this to her engagement online. Several participants explained they have friends who replace family members; however, emotional loneliness cannot be repaired by having more friends. Therefore, it could be that these people were extra motivated to interact with CGI-Is, in addition to these friends. It is likely that this resulted in a parasocial relationship (PSR), which might have decreased their feelings of loneliness.

Other respondents explained they only have few social connections, which might point to *chronic loneliness*. Most often people explained their online presence contributed to cope with this loneliness. This is illustrated with the following quote:

[33] “*Actually, now I'm in University and all my friends are not, I noticed that our time we used to spend together is reducing. In high school we were together all the weekends... But now I had like three weekends that I didn't see them or visited them. I then go to social media and have new experiences and a great time...*” (P. 9, female, Shudu Gram)

This quote supports the idea that people use social media in order to fight *chronic loneliness* and “to have a great time”. Generally, these interviewees explained they were rather introverted people and found it hard to make new friends offline. Based on this result, it can be argued that following CGI-Is contributed to a diminished feeling of chronic loneliness.

Further, there might be a connection between loneliness and boredom (4.4.5). Within the literature review (2.6.1) this connection was already suggested, since a person who is lacking contacts is expected to have more “useless” time to kill. Findings of this study revealed that respondents who sometimes felt lonely, also showed signs of boredom. Based on this result, it is assumed that lonely people not only engage with CGI-Is to decrease loneliness, but also in order to pass time, preferably in an entertaining way.

Furthermore, people’s perceived similarities with a CGI-I and perceived loneliness might also have resulted in the establishments of *parasocial relationships*, since several interviewees indicated to have some kind of connection with the CGI-I. One respondent explained she was treating Imma Gram the same as she treats humans, including the ways she commented on her posts. Other participants felt a deeper connection with a CGI-I: they do not talk about her as a virtual account, but as a ‘she’. This is demonstrated with the following quote:

[34] *“It's crazy because she's not real. I can feel the emotions of Lil Miquela and she's a robot. She looks very, very real. So, I found it spectacular, like incredible. That's what I like that she shows emotions, and I can feel it, you know.”* (P. 18, female, about Lil Miquela)

Two other followers of Lil Miquela felt even a closer PSR with Lil Miquela and called her a “friend”:

[35] *“To me, she is a friend. I mainly live my life online. I like helping people online, getting to meet people on my cyberspace. I would love to meet her but did not get the chance yet.”*

(P. 1, male, about Lil Miquela)

These results assume that humans not only establish PSRs with human celebrities, but also CGI-Is. Thus, it can be argued that PSRs – informed by perceived similarities and perceived loneliness – drive engagement with CGI-Is as well.

Half of the people who felt lonely sometimes, did identify the CGI-I as “friend”. These relations were less visible for perceived similarities; however, they did exist. Similarities in appearance were most often noticed by people, who ultimately also mentioned the establishment of a PSR (75%).

## **4.5 Drivers of disengagement with CGI-Is**

The following section introduces the main drivers of disengagement (DE) which were mentioned during the interviews. Two key incidents were identified when people experience negative feelings, being after visiting the profile page and after following the CGI-I. This will be further explained within the following paragraphs. Only drivers of personally interested respondents are taken into account in this chapter.

### **4.5.1 Negative attitudes**

As mentioned in section 4.4.2, positive attitudes towards visiting the CGI-I profile have led to following behaviour, however, interviews also identified negative attitudes, which are assumed to influence disengagement.

Respondents mentioned the CGI-I's *bad appearance* as only negative evaluation of their FTE. They made clear they had more respect for accounts who looked more real, rather than CGI-Is who looked virtual. Once, a participant came across a Thai influencer (name unknown) who looked “photoshopped” and “not real”. This made participant six feel “a bit triggered”. She explained that she did not follow her because “it is difficult to appreciate if it does not look nice”. Social media users who interacted with Lil Miquela and Knox Frost also experienced a negative evaluation, which led to disengagement:

[36] *"The appearance might be a negative thing for me. For example, when I saw Lil Miquela for the first time, I had to think of the Sims game. So, I really thought: 'This is fake', and is not really interesting to follow."* (P. 16, female, about Lil Miquela)

[37] *"I'm someone that never gives negative energy since I don't want that. And you know, with Knox, he did some posts that were not that well edited or looked cartoonish. Like, more than usual. Then I didn't comment anything."* (P. 8, male, about Knox Frost)

These comments suggest that social media users disengage with CGI-Is who look "cartoonish". Most interesting might be the quote of participant 16, wherein he judges Lil Miquela's "bad appearance", who is normally seen as one of the most realistic CGI-I with a high level of social presence. This would suggest that 1) people perceive a CGI-I's social presence differently, and 2) preferred levels of social presence depend on the individual. Further, these preferred levels may be affected by people's culture, which may explain their familiarity with CGI-Is. This is illustrated with the following quotes:

[38] *"It's not super foreign to me. Maybe just because I'm in Asia and you know, in Japan and stuff we kind of had that thing already for a long time."* (P.6, female, from Thailand)

[39] *"Looking at Asia, I think they are much more enthusiastic about virtual influencers than we are in Europe. We may be very sober."* (P.22, female, from the Netherlands)

These statements describe very well people's perceptions of their culture's influence on their familiarity with the phenomenon. According to participant six, Asians are generally not surprised by human-looking CGI-Is since they "had that thing already". Participant 12 supports this and assumes Asians may be more interested in CGI-Is and Europeans may be too sober.

#### **4.5.2 Irritation**

At a certain point, people felt their needs were not gratified (anymore), which led to disengagement. Participants mentioned two distinctive categories of DE, being: drivers to not follow a CGI-I (irritations) and antecedents of unfollowing behaviour (disappointments, section 4.5.3). Results unveiled three subcategories of irritation: antipathy against replacing humans, commercial background, and ethical considerations.

First, *Antipathy against replacing humans* is seen as irritation, which leads to not pushing the following button. They feel sorry for the human influencers, who might miss sponsorships because of CGI-Is and could be forced to stop in the future when brands eventually prefer CGI-Is. Another respondent mentioned she does not like CGI-Is to replace humans, because of their malleability. She explained that marketing agencies can decide how their CGI-I will look every day. Others elaborated a

replacement would not be a problem when “they are there for clothes”, however, they would find it a negative development when replacing medical professionals, e.g., doctors and psychologists. One person – who followed Shudu Gram – felt bad for human models, who might be replaced by CGI-I-models. She found them nice and creative but had questions with regards to the balance between humans and virtual models.

One professional model participated in this study as well. It was examined how she looked at this replacement of humans and was asked about her thoughts on Shudu Gram, as she was not familiar with this digital supermodel. Before visiting the account of Shudu, this respondent did not see them as possible competitor, however, she was pretty shocked when she saw this virtual model. Her reaction was as follows:

[40] *“Yeah... Oh wow... I haven't seen that at all, dude. Oh... How weird... [...] ...My modelling agency follows her too... I think that's really crazy... Now it suddenly becomes official, or something.”*

(P. 27, female, about Shudu Gram)

Aforementioned arguments would suggest that CGI-Is are not preferred when fully taking over the jobs of humans. This is sort of contradicting the section 4.4.4, wherein was explained that social media users were idolized by CGI-Is, thus suggesting that humans could be replaced by CGI-Is. It can be argued that both are true since the replacement of human influencers seems to be accepted to a certain level. For example, when thousands of CGI-Is will be introduced in the Netherlands (and thus replacing humans), it is expected that CGI-I's virtuality will become ordinary and it is likely that social media users become bored by them, rather than being perceived as idols.

Interviews also showed negative behaviours towards CGI-Is' *commercial background*. First, respondents were ‘irritated’ about the marketing team behind the CGI-I. One interviewee clarified he did not feel great about the creators, while another person thought it was not fair that brands manipulate consumer mindsets towards their products with CGI-Is. Generally, sponsorships of CGI-Is were perceived negatively if the post took a ‘hard sell strategy’. Some followers of CGI-Is found all promotional posts demotivating since these are not perceived as trustworthy in product recommendations. This is explained in the following statement:

[41] *“It is not fair right? There are brands behind the virtual influencers who actually manipulate our mindset towards their products.”* (P. 4, male, about Lil Miquela)

Another respondent gave a fictive example of CGI-I advertising cigarettes: “They do not have to support it”, he added. Thus, CGI-I's commercial background appears to be huge turn off for social media users, despite it is CGI-Is' business model. This might be explained by their lack of authenticity and thus lower levels of trustworthiness. This would contradict section 4.4.4, wherein was argued that

CGI-Is could have a similar level of trustworthiness as human influencers. It is expected that both interpretations are true: people accept that CGI-Is advise them to visit a certain restaurant, however, do not like to take over commercial recommendations of them. Apparently, CGI-Is are trusted to inspire people on higher levels but are not considered credible enough to recommend a product to them. It is likely that a product advertisement is perceived as more “hard sell” than a restaurant recommendation, which might be perceived as more tactful.

Another motivation to not follow CGI-Is is because of *ethical considerations*. One interviewee explained she might report a CGI-I on Instagram when they are not transparent about their origins. She gave the example of Lil Miquela – who claims to be a robot – however, is actually not an autonomous entity on Instagram. Further, CGI-Is who share political views were seen as unethical. This is illustrated with the following quote:

[42] *“And when it comes to political views, it might become a problem in the future. We need to see how far they go in campaigning in this kind of areas. You know, it's like a grey area.”*

(P. 16, female, about Plustic Boy)

According to this statement, political campaigning of CGI-Is is a grey area. This respondent perceived that humans could be punished by society when posting something controversial, whilst that is not the case with CGI-Is. It is possible that people doubt the CGI-I’s intentions because they often do not know the creators behind the account. These might have a political agenda, which makes people feel manipulated. Hence, people are expected to disapprove of both CGI-Is and human influencers when sharing their political views.

#### **4.5.3 Disappointment**

Besides aforementioned demotivating factors to not follow a CGI-I, interviews also provided insights into drivers of unfollowing behaviour. Mostly, people unfollowed the account because they were disappointed, which distinguishes two subcategories: lack of reciprocity and “solving the mystery”.

First, this study reveals that people unfollowed a CGI-I when the *reciprocity* diminished. In general, it was perceived as an unpleasant experience when the CGI-I did not reply anymore to their followers’ comments. This is illustrated as follows:

[43] *“I followed her for one year. But after that I became bored of her because she didn't reply anymore and didn't even see her private DMs. That's why I unfollowed Imma. I also used to follow her friend, but he didn't reply anymore as well.”* (P. 10, male, about Imma Gram)

Another participant explained he unfollowed Knox Frost, because the CGI-I unfollowed him first. Apparently, this respondent expected intensive reciprocity with Imma Gram, despite the fact she

has over 400.000 followers on Instagram. This would assume that replying to comments and mutual following is more important for CGI-Is than for human influencers. Hence, results showed reciprocity is found very important to keep following the CGI-I.

Secondly, unfollowing behaviour is triggered when “*the mystery is solved*”, referring to when social media users identify the CGI-I as such:

[44] “*I followed her when it went viral one or two years ago. But lately it was not interesting anymore, because we knew she wasn't human. So, I got the answer to my question, and I unfollowed her.*”

(P. 14, female, about Here is Rae)

This confirms the interpretation as described in section 4.4.1. A minority of this study’s sample – who did not identify the CGI-I as such after their FTE – followed the account to answer the question: is it a human or a virtual influencer? Obviously, when ‘solving this mystery’ they did not have any motivations to keep following the account. Hence, they unfollowed.

## **4.6 Expectations of AIG-Is**

Besides research on the CGI-I, this paper also included research on the – non-existent on Instagram – artificial intelligence-generated-influencers (AIG-I). Respondents were questioned to verbalize their expectations of engagement with an AIG-I. Since this phenomenon does not exist yet, interviewees were exposed to this study’s definition of the new phenomenon, This can be found in section 2.2.2. Results showed that participants were quite divided on this topic. Forty-two percent expect to engage with an AIG-I, whilst the other 58% expect not to have any interactions with this autonomous influencer. In contrast to the previous results sections, this section includes both expectations of both personally and professionally involved respondents. These are assumed to complement each other in order to delineate accurate expectations of the future.

### **4.6.1 AIG-I engagement motivators**

Half of this study’s sample would expect the introduction of AIG-Is on Instagram to be a positive development due to AIG-I’s autonomy, curiosity on the development, and entertainment motivation.

The most relevant motivation to engage with them is because AIG-Is would have an *autonomous* character. People described it as progression in the virtual scenes and would love to get replies from learning algorithms. Two respondents expect this AIG-I to become even more independent and honest than humans are. This is illustrated with the following quote:

[45] “*I know it is just data, but it seems more real than the way people act, because when it learns to talk with people, it will not lie to you and will be completely honest. I would rather interact with something that is honest than someone who is going to sit there and try to make friends with me by*

*making up lies and stories. If AIs were available, I would talk to them more often than Lil Miquela. I would question them about things that people couldn't understand.”* (P. 5, female, about AIG-Is)

Participant five clearly described she would rather engage with AIG-Is than human influencers and CGI-Is – managed by humans. This is explained by AIG-I’s autonomous character which is perceived as “honest”. As mentioned in previous quote, this characteristic of being “fair” would also lead to more engagement. In contrast to the AIG-Is, the human influencers and CGI-Is are perceived as dishonest since they are managed by humans. This would suggest that the engagement of those influencers will decrease when the AIG-I would be launched.

Another frequently mentioned reason to follow an AIG-I is through one’s *curiosity on the development* of AI. These people describe themselves as ‘tech geeks’ and appreciate progress in computer work and would be curious in the science behind the AIG-I. The following participant is sure that self-aware AIG-Is would enhance community enthusiasm significantly more for people than CGI-Is:

[46] *“It would generate more excitement than virtual influencers when the AI is self-aware. I will have more questions. It's just so fascinating. I think it will generate more attention and the WOW-factor will be bigger, definitely.”* (P. 7, female, about AIG-Is)

The previous quote demonstrates another advantage of AIG-I, that would be self-awareness. It signifies that AIG-Is would be aware of their existence and beliefs, similar to humans. Apparently, this would provide AIG-Is with the so called ‘WOW-factor’, which is likely to decrease for CGI-Is in time. Therefore – as AIG-Is are perceived as more fascinating – CGI-Is are expected to be replaced over time. This also relates to section 4.4.4, which assumed that innovators follow CGI-Is because it is an innovation. When this AIG-I would exist, this group is expected to switch first, followed by early adopters.

Interviews also showed that people would follow AIG-Is out of *entertainment* motivations. One respondent compared the AIG-I with watching a video game in real life, which she refers to as ‘funny’. Another one called it ‘funny’ when an automated account would reply to them. However, she argued that AIG-Is should be considered as ‘just’ robot influencers and drew a line at deploying AIG-Is in as medical influencers. This finding is in line with irritations about CGI-Is, mentioned in section 4.5.3. Hence, it can be argued that sophisticated AIG-Is are especially accepted when applied in entertainment sectors in order to give people a good time on social media.

#### **4.6.2 AIG-I engagement demotivators**

Despite aforementioned drivers to engage with the futuristic IG-I, a majority of this study’s participants had negative expectations of the futuristic AIG-Is. Interviewees explained they often they would not

engage with AIG-Is, since they do not see the added value of autonomous influencers as it would be irrelevant on social media when they apply a similar content strategy as CGI-Is. The AIG-I needs *utilitarianism* to become interesting for them, as illustrated as follows:

[47] *“When an AIG-I that spreads fake news, then it is of course a problem. But if the ANP (Algemeen Nederlands Persbureau) finds a cheap way to create a new kind of reporter who is unleashed on their news content and thus appeals to a new generation with reliable news, yes... That's it with technology: you can do it on use two ways. Ultimately it is about relevance: what problem does it solve.”*

(P. 29, male, about AIG-Is)

This statement suggests that people would be demotivated to engage with an AIG-I when it does not solve a problem. Hence, this group does not see the added value of an AIG-I when having a similar content strategy as CGI-Is, e.g., showing nice restaurants in the area.

Secondly, interviews showed AIG-I's *lack of authenticity* as important motivator to not follow them, since their contents are expected to be “very bland”, as described by participant 6. Generally, these people are not inclined to engage with AIG-Is because no humans will be involved who strategically think about the contents:

[48] *“I think even more that a piece of authenticity will be lost. And that makes it even less interesting.”*

(P. 28, female, about AIG-Is)

This quote illustrates that AIG-Is are not expected to be authentic. This is similar to the findings of CGI-Is' authenticity, which would suggest that AIG-Is would also be perceived as not trustworthy in product recommendations.

Thirdly, interviewees explained they would not follow AIG-Is because of their *creepiness*. A participant remembered an article wherein she read about two AI-bots that worked together, but suddenly started talking to each other in their own language. This person perceived this as “scary” and “terrifying” and would prefer when humans control them. The feeling of creepiness was also related to “someone who is watching”. One respondent interpreted it as a privacy violation, since algorithms will become even more sophisticated, whilst another was scared of a “big brother-concept”, referring to George Orwell's' dystopian novel wherein he warns for total surveillance of governments. The following statement illustrates creepiness as demotivator:

[49] *“So that's a real robot, isn't it? I think that's really terrible! I think that's so bad... I think that's really bad... There's nothing human about it anymore. It's a completely unmanageable thing... And what is also supported by people, I think that's pretty intense. If something like that happened, I'd get off social media.”* (P. 27, female, about AIG-Is)



This quote describes very well that “unmanageable” AIG-Is could elicit awkward feelings. Their fears might be caused due to people’s thoughts of being watched by the powerful algorithms. Remarkable is that creepiness had not been indicated once as driver of DE with CGI-Is, despite using algorithms in the creation of their looks, story, and personality. This is possibly explained by respondents’ ignorance on CGI-I’s creation.

Further, folks would not follow an AIG-I because they *distrust their accuracy*. They doubt whether such an influencer would work in the future. And if they would be accurate, “human emotional mastery is expected to not fit the rapid AI-developments”, as pointed out by participant 12. Hence, they would prefer a human to be managing such accounts.

Finally, participants would not like to engage with AIG-Is since they are expected to *replace humans* – which is similar to the demotivators of CGI-Is. This is mainly caused since they would not like to follow data-driven influencers exclusively – rather than fearing for jobs of human influencers. This connects really closely to the aforementioned entertainment motivations and lack of authenticity. Therefore, it is expected that social media users would only like AIG-Is for entertaining purposes – rather than professional applications wherein it replaces a human professional.

## 5 Discussion

The aim of this study was to detect drivers of CGI-I engagement and to explore expectations of the – non-existent – AIG-I in order to inform brand managers and marketing agencies. Within the previous section, the obtained results were discussed and interpreted, whilst this section summarizes the main results and examines these findings against existing literature. Besides the theoretical implications, this section also covers practical implications, research limitations and future research directions.

### 5.1 Main results

This study's objective was to answer the following research question: *What underlying motivational factors drive audiences to engage with computer-generated imagery-influencers and what are their expectations of engagement with the futuristic artificial intelligence-generated-influencers on social networking sites?* All in all, this section will answer this question by summarizing all results gathered with an interview study. These outcomes led to the development of a new theory, being the 'computer-generated imagery-influencers engagement model'. This theoretical visualisation can be found in figure 3 and describes why personally involved users engage with CGI-Is. This section discusses all concepts within the model.

Social media users' exposure to CGI-Is seemed to be affected by people's perceived behavioural control (PBC), as described by the Theory of Planned Behaviour (Ajzen, 1991). Social media engagement and visibility of CGI-Is were seen as predictors of exposure. Folks who engage with CGI-Is use social media platforms on average two and a half hour more than others (Oberlo, 2022). This might explain that this study's sample perceived their engagement as resource – rather than obstacle - which possibly made CGI-Is more visible and thus increased their perceived control of exposure. According to the interviewees, however, CGI-Is are not visible in itself: most respondents were only exposed to one CGI-I. Therefore, visibility of CGI-Is is likely to be an obstacle for (potential) consumers of brands who advertise with CGI-Is.

At distinctive moments people get exposed to the CGI-I in several ways, e.g., social media algorithms, advertisements, or word-of-mouth. This resulted in people identifying the CGI-I as such or not. Before this research, it was suggested that a difficult identification would lead to less engagement, however, the opposite seems to be true: when someone is unable to determine conclusively whether an account is human or CGI-I, they will engage more with it. This exposure might trigger people's media needs, as explained by the Uses & Gratifications Theory (Katz et al., 1973). Two distinctive categories were identified: CGI-Is' mystery and people's curiosity made people visit the CGI-I's Instagram profile page, defined as first time engagement (FTE). In specific, people showed this behaviour as they felt the need to "solve the mystery", since they identified the account as a "strange" human. Others were doubting about being human or virtual and visited the profile out of curiosity.

After people – mostly thoroughly – analysed the Instagram page of the CGI-I, people were often able to identify the account as such, e.g., via account's biography or post captions. This recognition of

the CGI-I possibly affected one's attitude. Within this study attitudes refer to an evaluation to the FTE, rather than beliefs about the requirements for engaging with CGI-Is and the results of that behaviour (Ajzen, 1991). For example, non-identification led to people being confused in a positive way and identification resulted in people appreciating the realism. On the other hand, identification led to negative evaluation due to CGI-Is' bad appearance. Subsequently, negative attitudes is expected to affect irritations and result in disengagement (DE), whilst positive attitudes may cause in long term engagement (LTE), driven by entertainment and information seeking. First, social media users follow CGI-Is for entertainment purposes. They just want to have "a good time". Further, people pushed the follow button of a CGI-I in order to seek for information about them. This may overlap partly with the aforementioned concepts of mystery and curiosity as all three focus on 'solving the problem'. However, information seeking is perceived as a more conscious driver, whilst the two others are expected to be more unconscious. Irritation was identified as a driver of DE – caused by an antipathy against replacing humans and CGI-Is' commercial background – and might result in not following CGI-Is.

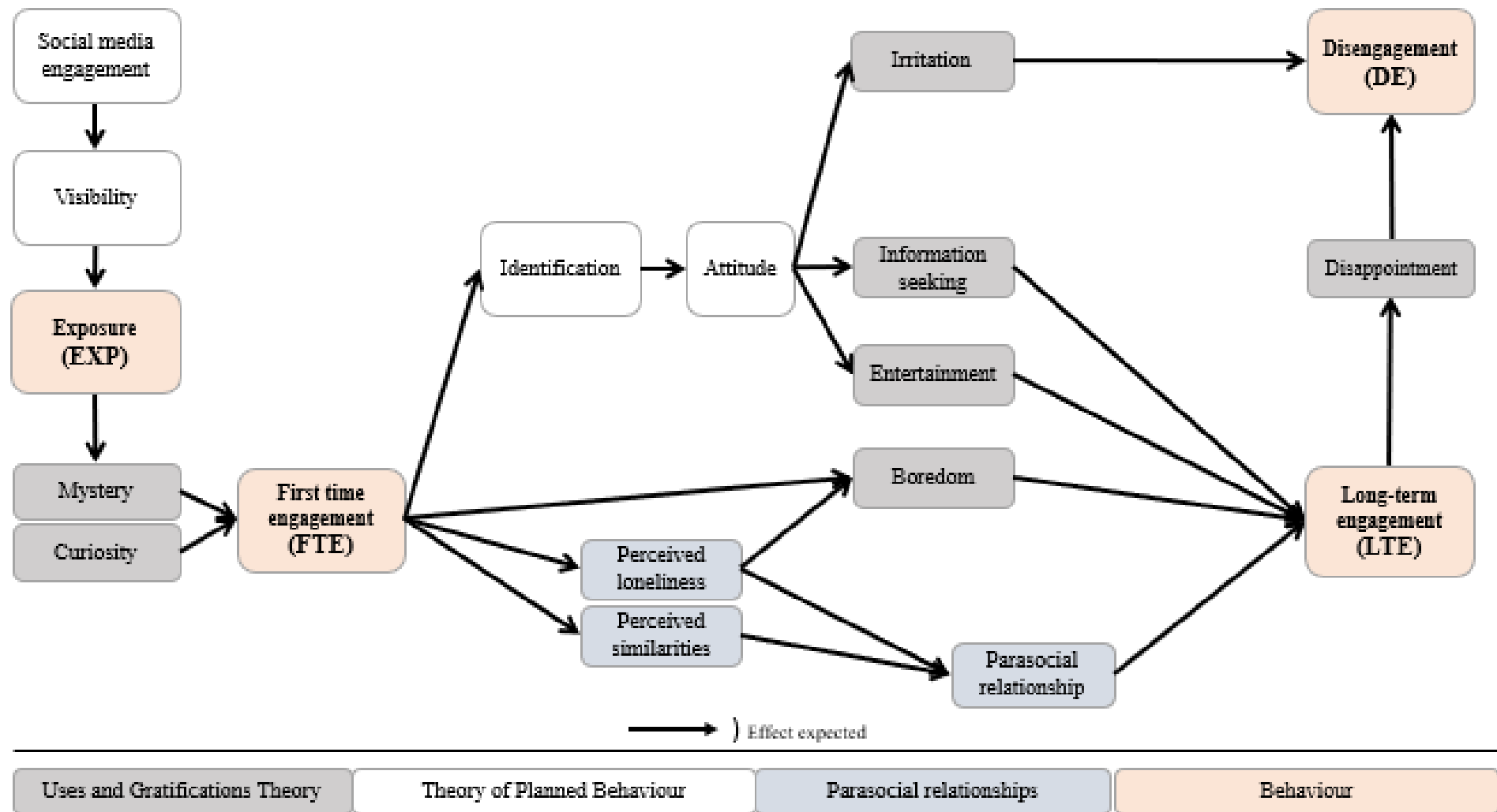
Further, the results also revealed drivers of LTE that were not connected to attitudes. Firstly, liked to follow a CGI-I in order to kill some time. Therefore, boredom is seen as another need to be gratified. Besides, results showed perceived loneliness and perceived similarities as possible consequence of the FTE. These drivers of parasocial interaction are expected to be explaining the establishment of a parasocial relationship (PSR) with a CGI-I, as explained by Horton and Wohl (1956). Some participants within this study's sample experienced a close relationship. They want to meet them in real life and sometimes even called them "friends". This PSR may have motivated social media users to follow.

An influencer-follower relationship may sustain for years, however, may be damaged when followers become disappointed. This study's results found that social media users mostly unfollowed a CGI-I when it did not reply anymore on their comments or direct messages. A lack of reciprocity may possibly break down the PSR and therefore result in DE.

To conclude, this research focused on the – not yet existing – AIG-I. Remarkably is the great disunity among people who engaged with a CGI-I. Fifty percent of the interviewees expect not to interact with the account due to its creepiness, lack of authenticity, human replacement, distrust in AI-accuracy, and utilitarianism. The other half expect to interact with AIG-Is for their autonomous character, out of curiosity, and for entertainment purposes.

**Figure 3**

*Computer-generated imagery-influencers engagement model*





## 5.2 Theoretical implications

This study tried to fill in the research gap of social media users' motivations to engage with VIs by answering the following research question: *What underlying motivational factors drive audiences to engage with computer-generated imagery-influencers and what are their expectations of the futuristic artificial intelligence-generated-influencers on social networking sites?* Hence, the following paragraphs will discuss all four sub questions.

### 5.2.1 Uses and Gratifications Theory

First of all, this study incorporated the Uses and Gratifications Theory to interpret the behaviour of social media users towards CGI-Is. This led to the first sub question: *What are social media users' media needs that lead to engagement with a computer-generated imagery-influencer?* I assume that mystery, curiosity, entertainment, information seeking, boredom are needs to be gratified when interacting with CGI-Is, whilst irritation and disappointment are suggested as drivers of disengagement.

According to the interviews conducted, CGI-Is fulfilled multiple media needs of social media users that may have motivated them to interact. *Curiosity* and "*solving the mystery*" are identified as important antecedents of engagement since they did not recognize the CGI-I as such. Their non-identification might be caused through CGI-I's high social presence, which was perceived as something positive. This contradicts findings of Arsenyan and Mirowska (2021) with regards to the Uncanny Valley theory, as they found that CGI-Is with a high social presence would generate significantly less engagement. On the other hand, this study's results could also mean that current CGI-Is apply such a high social presence that may avoid the Uncanny Valley (Mori et al., 2012). Further, this level of social presence may depend on the individual. Within the sample, participants did not have consensus on the human likeness of Lil Miquela and whether or not this level of social presence was preferred. This is in line with the results of Jang and Eunah (2020). The Uncanny Valley of Mori et al. (2012) visualizes several stages of social presence applied to entities and indicates whether or not that is preferred, however, this study would nuance this assumption since a high level of social presence might be a positive thing for person A, whilst a similar situation may elicit awkward feelings for person B. The extent to which a social presence is preferred may also be explained by people's familiarity with and knowledge of CGI-Is. Section 4.5.1 describes very well the differences in CGI-I's acceptance between an Asian and an European interviewee. Since Asians seem to be much more comfortable with more realistic CGI-Is than Europeans, they may accept higher levels of human likeness applied to non-humans. The effect of a cultural factor on the 'depth' of the valley had already been investigated in the context of robots and prostheses (Destephe et al., 2015; Gee et al., 2005). For example, Destephe et al. (2015) assume that Japanese (Asian) participants would perceive robots as less creepy than respondents from France (European).

Another important media need that led to engagement is *entertainment*, which does not only apply to one-way mass media (Blumler & Katz, 1975), but also appeared to drive engagement on new

platforms, e.g., Snapchat and TikTok (Dodoo & Youn, 2021; Falgoust et al., 2022). This also appeared to be true for engagement with CGI-Is. Striking is that this study's results would assume that CGI-Is have a similar level of trustworthiness and credibility as human influencers since people see them as source of *inspiration* and sometimes seen as *idols*, whilst they are seen as less credible when recommending products. Scholars only support the latter argument as human influencers are assumed to possess a higher level of trustworthiness (Fernandes & Oliveira, 2021; Moustakas et al., 2020). However, it could be that people were idolized and inspired by CGI-Is through followers' – false – perception of human autonomy, as described by (Farrera Saldaña, 2021) and Sands et al. (2022). For example, Lil Miquela claims to be autonomous, which may increase her source trustworthiness.

Interacting with CGI-Is is among others perceived as an *escape from reality*. This – so called – diversion might have created a pleasant atmosphere, which leads to gratifications of their needs and thus to following. Literature suggests social media users engage with SMIs as well in order to escape from reality, however, CGI-Is are expected to offer more enjoyment (Arsenyan & Mirowska, 2021). This is likely to be caused through SMIs' real life problems such as politics and societal problems, which are mostly avoided by CGI-Is. *Technological advancements* were seen as another subcategory of entertainment, since CGI-Is can be seen as a relatively new technological phenomenon. This is in line with the study of Pan et al. (2017), who perceive technology as driver of exploratory engagement. Though, technological advancements may be only a temporary driver, since CGI-Is will become ordinary when other innovations flourish.

Besides drivers of engagement, this research identified ungratified needs as demotivators. Ethics were mentioned as driver of irritation. This may be caused due to the political campaigning of CGI-Is, which is perceived as unethical, because people do not know exactly who is behind the account and whether or not this person is responsible for its posts. Hence, this study would expect that users blame CGI-Is for not being able to take responsibility. Liu and Lee (2022), however, contradict this result. They researched how and to what extent customers assign blame to CGI-Is and found that CGI-Is face less responsibility than human influencers for an advertisement mistake caused through their misbehaviour.

*Antipathy against replacing humans and commercial backgrounds* were found as drivers to not to follow CGI-Is, which is supported by existing literature (Jang & Eunah, 2020; Zhang et al., 2020). Further, this research indicated a *lack of reciprocity* as driver of unfollowing behaviour. This sort of *disappointment* could be explained by the weakened PSR, as described by Block and Lovegrove (2021). Hence, two-way communication is found to be very important for social media users who engage with CGI-I; if they fail to respond, the relationship will be damaged.

### 5.2.2 AIG-I expectations

A second sub questions has been developed in order to research participants' expectations with regards to the futuristic AIG-Is: *What expectations do social media users have of their media needs that affect*

*engagement with an artificial intelligence-generated-influencer?* Results assume curiosity, autonomy, and entertainment motivations as main drivers of engagement, whilst utilitarianism motivations, a lack of authenticity, creepiness, replacing humans, and distrusting AI-accuracy was found to demotivate people to engage.

This non-existent phenomenon is expected to have huge potential and might trigger social media users' engagement in another way than existing SMIs and CGI-Is (Appel et al., 2020; Sterne, 2017). First, people expect this AIG-I to be a positive development because of its expected autonomy. This is supported by literature, which assumes that users' engagement would increase when interacting with an autonomous account (Farrera Saldaña, 2021; Labrecque, 2014; Sands et al., 2022), rather than a CGI-I managed by humans.

On the other hand, results demonstrated a lack of authenticity as motivator to disengage with AIG-Is. Their contents and storytelling would be data-generated, and thus would not be authentic (Chung & Cho, 2017). Scholars explained this through AIG-Is' self-disclosure in storytelling, which normally would decrease the distance between follower and influencer and strengthen the relationship with SMIs and CGI-Is, but will have a paradoxical effect for AIG-Is' data-generated content (Labrecque, 2014).

Perceived creepiness is assumed to be another pitfall of AIG-Is. This concept includes sceptical thoughts on the accounts' self-awareness and might subsequently lead to more humanlike actions. Arsenyan and Mirowska (2021) support this and warn practitioners for making AIG-Is too humanlike, while they also advocate for more virtuality rather than maximizing realistic appearances. These negative behaviours towards this humanlike characteristic might confirm the Uncanny Valley, which was denied for CGI-Is in 5.2.1. It appears that AIG-Is may elicit awkward feelings in earlier stages – compared to CGI-Is – since these automated accounts are more humanlike as they might become self-aware.

### **5.2.3 Theory of Planned Behaviour**

The following sub question was another objective of this study: *What attitudes, subjective norms, and perceived behavioural control play a role in social media users' engagement with a computer-generated imagery-influencer?* Apparently, social media engagement, CGI-I visibility, CGI-I identification, and attitudes influenced engagement with CGI-Is in some way, while marginal evidence was found for subjective norms.

Firstly, attitudes towards visiting the CGI-I's Instagram profile were identified. Interviews showed that the first time engagement with CGI-Is were among others positively evaluated due to people's *confusion* about their existence. This is in line with findings of Jang and Eunah (2020), who inquired why social media users assessed CGI-Is positively. They found that CGI-Is' innovative use and freshness amazed people in a positive way. It seems that these concepts have similar origins, being the novelty of this phenomenon. This might assume CGI-Is are only evaluated positively for some time,



which would result in more negative evaluations of FTE in the future. On the other hand, attitudes towards visiting the profile of the CGI-Is were negatively evaluated through *body positivity*, *bad appearance*, and a *lack of authenticity*. Literature provides evidence that CGI-Is who look “virtual” are negatively assessed, since it is perceived as “unpleasant” (Jang & Eunah, 2020). Interesting as well is their elaboration on this finding, as they noticed this negative evaluation was caused only after identifying the CGI-I as such. Beforehand – when recognized as human – people did not see this disadvantage.

Perceived behavioural control was found to be an important driver of engagement with CGI-Is. Especially, people’s high social media usage (20 hours a week on average) might play a prevalent role. According to literature, this behaviour is explained by several factors, such as boredom and Fear of Missing Out (FoMO) (Przybylski et al., 2014; Whelan et al., 2020). These may drive folks’ engagement, thus decreasing their perceived control over their social media usage, and fostering their interaction with CGI-Is. As opposed to the aforementioned social media usage, the CGI-I’s visibility is assumed to be an obstacle of engagement with a CGI-I. A possible explanation of this invisibility is the stagnant growth of humanlike CGI-Is. A possible indicator might be Lil Miquela’s amount of followers on Instagram, which is fixed at three million followers for a year already, while the non-humanlike Nobody Sausage grew with two million followers in the same period (Blakiston, 2021). Moreover, some other CGI-Is with huge audiences seem to have stopped posting for a longer period of time, such as Bermuda, Knox Frost, and Thalasya. Hence, a CGI-I’s invisibility does not only lead to people not being able to find them, but also seems to threaten CGI-Is in their growth and thus their viability.

#### **5.2.4 Parasocial relationships**

The role of parasocial interaction (PSI) in engagement with CGI-Is was also examined within this study. Therefore, the fourth sub question was designed: *What dimensions of loneliness and perceived homophily play a role in social media users’ engagement with a computer-generated imagery-influencer?* Interviews conducted showed both concepts to be influential in the establishment of a parasocial relationship (PSR) with CGI-Is.

Based on this study’s results, it can be argued that PSRs – which provide interpersonal needs – might not only be established with humans, but also non-humans such as CGI-Is. This relationship may be partly explained by people’s loneliness. Especially, emotional loneliness and chronic loneliness were identified, as defined by Wang et al. (2008). Krämer et al. (2018) suggest these entities – such as CGI-Is – are able to temporarily satisfy people’s social needs as a sort of “social snack” rather than replacing human interaction (Gardner et al., 2005). This might contribute to why people – who experience loneliness – engage with CGI-Is.

Besides loneliness, perceived homophily was also found to influence people’s parasocial interaction with a CGI-I. Results showed that people mostly identified similarities in their lifestyle, which broadened the concept of background homophily from McCroskey et al. (1975). This new concept

considers resemblances in how people behave, but also their working environment, living environment, and leisure activities. Further, people perceived similarities with the CGI-I's appearance, morality, and attitude. These findings are supported by literature on human-computer interactions, which found that people's resemblances with computers would drive interactions as well – similar to when humans engage with humans (Nass et al., 1995). According to this study's results, perceived homophily also applies to engagement with CGI-Is.

All in all, this study found evidence for loneliness and perceived homophily as possible drivers of parasocial interaction with a CGI-I, which is supported by literature. However, Shechtman and Horowitz (2003) argue that people's identification of the CGI-I would change their behaviour and thus the strength of the PSR. In specific, they claim that computers (similar to CGI-Is) – identified as human – elicit four times more behaviours that lead towards a PSR than identifying the computer as such. Moreover, people were spending more time and had higher engagement levels when identified as human.

### **5.3 Practical implications**

This study provides literature with a new model which proposes possible drivers of CGI-I engagement. Besides, it also presents relevant implications for practitioners. Outcomes of this paper might be useful for brands – especially when located in Asia – who developed a CGI-I or think about designing an AIG-I in order to generate an organic brand community on social media, especially Instagram.

First of all, brands are advised to design a highly realistic CGI-I, thus aiming for a high social presence. This controversial strategy – considering the Uncanny Valley – should be taken in order to make people curious, which is expected to generate high levels of engagement. As mentioned in the results section, the preferred level of social presence is expected to depend on the individual and familiarity with virtuality. With regards to this the degree of normalization there might be a difference between social media users from different countries and even continents. For example, Asian social media users might not be impressed about the social presence of Esther Olofsson anymore since they are exposed to these virtual persona's for a long time of period already, whilst European social media users may become curious when seeing this CGI-I. On the other hand, Europeans are expected to develop awkward feelings when being exposed to a humanlike CGI-I, rather than Asiatic people who might want to “solve the mystery”.

Brand managers and marketing agencies are also recommended to incorporate other unique selling points to their CGI-I after they are identified as such. For example, followers want to escape from reality or kill time when interacting with the account. This can be achieved by posting content which does not include societal challenges or political views. To optimize results, the CGI-I needs to diminish irritations and disappointments through posting tactful ads and telling an intriguing story. This would increase the chance that social media users will unconsciously start a parasocial relationship with the account, which may be strengthened when the creators fulfil followers' needs to respond to them in

the comment section and direct messages. Further, it is preferred to use the CGI-I as brand ambassador – rather than being dependent on sponsorships – since brand ambassadors are expected to build upon one brand story and subsequently establish relationships with their brands' customers.

Last but not least, this study provided some first insights into consumers expectations of the futuristic AIG-I. Within this sample, people were rather negative about its arrival on social media, because of its lack of authenticity. This may be tackled by enlarging the benefits of AIG-Is, e.g., accurate AI-generated replies on comments. Brand managers and marketing agencies creating an AIG-I are further advised to focus on accessible application areas such as entertainment in order to decrease levels of discomfort about the accounts' usage of algorithms and resulting fears of privacy violation. AIG-I's are also expected to become self-aware which increases their social presence and thus the chance of the Uncanny Valley to come into play. Hence, in order to prevent these awkward feelings, brands should – unlike CGI-Is – neutralize their social presence by decreasing the realism in AIG-I's appearance.

#### **5.4 Limitations and future research**

This study was subject to several limitations. First of all, this study's results were obtained by means of interviews. This qualitative method provided several opportunities in relation to this new phenomenon, however, also brought some disadvantages. The view of reality may have distorted since respondents did not know everything about themselves or they presented things in a preferred way. Moreover – due to practicalities – interviews were held online, which might have decreased interactions between researcher and participant and thus reduced data richness. Further, several topics seemed to be too difficult to verbalize for participants within this interview-based study. Concepts such as subjective norms, perceived behavioural control, and perceived homophily were taken into account as this process towards behaviour was not expected to be solely consciously made. This may also explain why this study did not found evidence for subjective norms to be influencing engagement with CGI-Is. Hence, in order to overcome the limitations of this method, a survey is perceived to be the best strategy for future research. Scholars are also recommended to rethink the possible influences of significant others in relation to engagement with CGI-Is.

Secondly, the recruitment strategy is seen as limitation, despite the fact that it is considered the most ideal option in this case. Respondents were contacted through Instagram's direct messages after being recruited via the same platform, e.g., followers of CGI-Is, comments on posts. This led to the recruitment of all 29 respondents, although, it turned out almost half of the participants interacted from a professional perspective (45%). Hence, future research is advised to employ another contacting strategy in order to limit professionally involved participants. For instance, scholars could recruit respondents from CGI-I's fan pages on Instagram or other fan forums. Further, this recruitment strategy also made it impossible to interview social media users who did not like, follow, or comment on a CGI-I after visiting its Instagram profile (FTE). Therefore, the proposed model as visualized in figure 3 only includes perceptions of irritations which might lead to disengagement. In order to map drivers of

irritations, future research are recommended to conduct interviews with social media users who were not inclined to engage with a CGI-I.

Thirdly, this study's sample includes participants from five continents and 14 countries, which provides literature with a diverse palette of motivations to engage with CGI-Is. However, this could be interesting results for worldwide brands, it may be less interesting for brands who focus on a particular country. Therefore, future research on engagement drivers are advised to focus on a particular country or region, e.g., the Netherlands. Why do Dutch people like or follow CGI-Is? And why do they disengage with them?

Fourth, future studies should shed a light on engagement drivers of other types of the virtual influencer, such as the non-humanlike virtual influencers and VTubers. As this study assumes, CGI-Is are among others followed for applying humanlike characteristics to the brands (anthropomorphization), whilst non-humanlike VIs may be followed because of their comical and cartoonish looks and contents, e.g., Nobody Sausage (Appendix C).

Fifth, scholars should expand research on the futuristic AIG-Is. Especially, since this study's respondents seemed to be quite divided in their expectations of its introduction, whilst scholars are quite enthusiastic about AIG-I's future. For instance, it might be interesting for future studies to gather a deeper understanding in why social media users would be reluctant to AIG-Is and what would minimize these expectations. It would also be fruitful to examine why social media users have positive expectations of engagement with an AIG-I, which could eventually optimize the engagement.

## 6 Conclusion

In summary, this paper broadens the literature on humanlike virtual influencers by providing possible drivers of first time engagement (FTE), long-term engagement (LTE), and disengagement (DE). A full overview of these factors can be found in the computer-generated imagery-influencers engagement model, which incorporated concepts of Uses and Gratifications Theory (UGT), Theory of Planned Behaviour (TPB), and drivers of parasocial relationships (PSR) and can be found in figure 3. First, it shows how social media engagement and visibility of CGI-I might relate to whether or not social media users are exposed to CGI-Is, whilst CGI-I's mystery and users' curiosity are expected to lead to FTE. Subsequently, the identification of the account may affect user's attitude, which refers to positive and negative evaluations of their FTE. These may partly relate to CGI-I's social presence, of which the perceived level and preference is assumed to depend on the individual and their background. The need for information seeking and entertainment may further be gratified by following a CGI-I, whilst several irritations were identified as drivers of DE. Other drivers of LTE – which are not expected to be explained by identification nor attitudes – are boredom, perceived loneliness, and perceived similarities. Finally, a lack of reciprocity with a CGI-I and identification of the CGI-I presumably lead to unfollowing behaviour (DE). To the researcher's knowledge, this study was also the first attempt to seek for insights into social media users' expectations of the futuristic AIG-I. It appeared that social media users disagree on the desirability of the futuristic AIG-I: they have negative expectations because of utilitarianism needs, creepiness, and a lack of authenticity, whilst they expect to engage with AIG-Is because of their autonomous character, curiosity, and entertainment motivations. Hence, it may be fruitful to further inquire users' expectations of this futuristic phenomenon.

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## Appendix A

### Collaborations between CGI-Is and brands

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Lil Miquela x Samsung

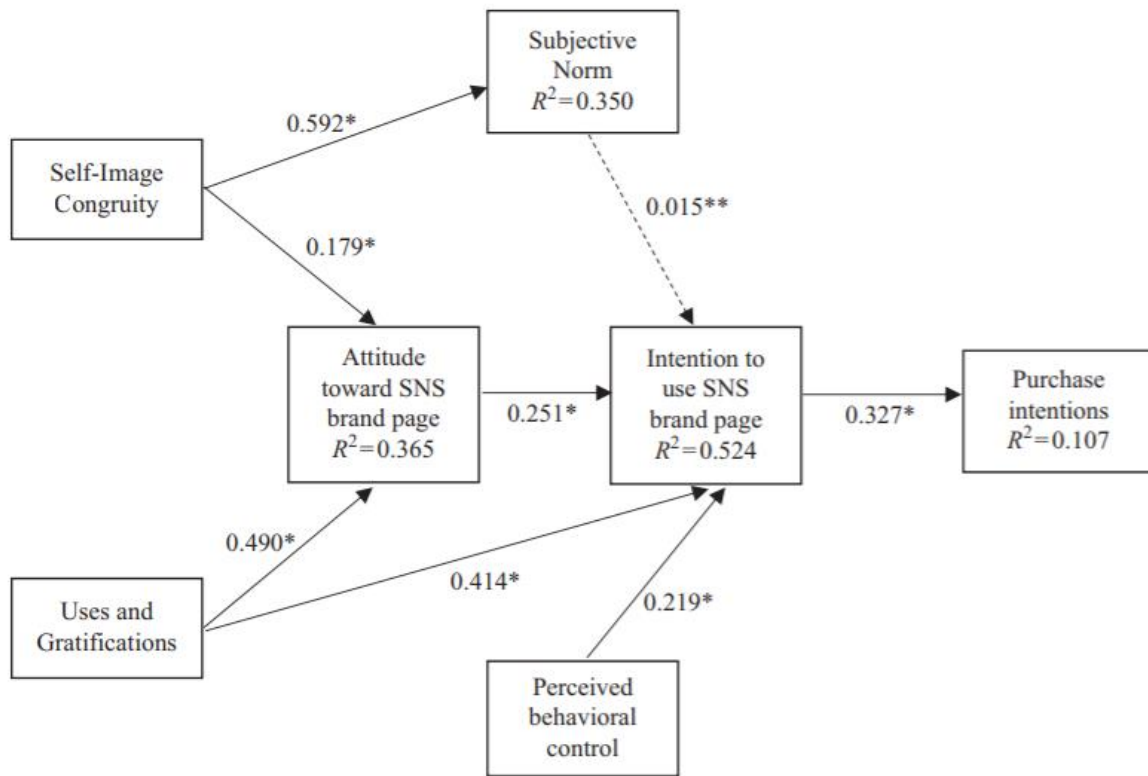
Imma Gram x Paris Fashion Week

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## Appendix B

### Integration of TPB-concepts and UGT-drivers



Notes: \* $p < 0.001$ ; \*\*not significant



## Appendix C

### Humanlike vs. non-humanlike CGI-Is

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Disapproved CGI-I

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Approved CGI-I

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## Appendix D

### List of approved CGI-Is

Nr.	Name	Social media name
1	Miquela Sousa	<i>@lilmiquela</i>
2	Imma	<i>@immagram</i>
3	Knox Frost	<i>@knoxfrost</i>
4	Daisy Yoox	<i>@yoox</i>
5	Thalasya	<i>@thalasya_</i>
6	Bermuda	<i>@bermudaisbae</i>
7	Leya Love	<i>@leyalovenature</i>
8	Essentialxo	<i>@essentialxo</i>
9	Shudu Gram	<i>@shudu.gram</i>
10	Ronald F. Blawko	<i>@blawko22</i>
11	Mar.ia	<i>@soymar.ia</i>
12	Amara	<i>@amara_gram</i>
13	Jedy Vales	<i>@jedyvales</i>
14	Te'resa	<i>@virtual_teresa</i>
15	Binxie	<i>@itsbinxie</i>
16	Serah Reikka	<i>@serahreikka</i>
17	Plusticboy	<i>@plusticboy</i>
18	Esther Olofsson	<i>@esther.olofsson</i>
19	Phoenix McEwan	<i>@phoenixmcewan</i>
20	Here is Rae	<i>@here.is.rae</i>

## **Appendix E**

### **Instagram DM interviewees**

'Hi [...]!

I hope you're doing well. My name is Mick, and I am a Master student in Communication Science in the Netherlands. Currently, I am doing my graduation research on virtual influencers, and I was wondering if you would like to help me out, since you commented on a post of @immagram

How can you help me? Well, I am organizing online interviews (+- 30 minutes) with people who enjoy talking about virtual influencers. I will be only interested in your ideas and motivations, so preparations before the interview are also not needed. Native English speakers would be very welcome, but perfect control is not needed (I have basic English skills as well).

Please let me know your thoughts!

Kind regards,

## Appendix F

### Topic list interviews

Part	Topic		Example questions
1	Activity on social networking sites	(Rosen et al., 2013)	<ul style="list-style-type: none"> <li>• How often are you active on SNSs? (Platforms, time consumption of influencer, types of content)</li> <li>• With whom/what do you interact utmost on SNSs? (Follow, comment, like)</li> <li>• What is a CGI-influencer for you? (perceptions) (characteristics)</li> </ul>
2	Gratifications from CGI-I engagement	(Croes & Bartels, 2021; Kinnally & Bolduc, 2020)	<ul style="list-style-type: none"> <li>• What media needs do you have? <ul style="list-style-type: none"> <li>- What of these needs are gratified when engaging with CGI-Is?</li> <li>- Uniqueness, entertainment, boredom, information seeking, irritation</li> </ul> </li> <li>• What makes you say that?</li> </ul>
	Attitudes towards CGI-I engagement (Beliefs to adhere VI-engagement lead to certain consequences)	(Pelling & White, 2009)	<ul style="list-style-type: none"> <li>• How would you evaluate the engagement with [CGI-I]? (pos/neg?)</li> <li>• What advantages/disadvantages of engagement do you perceive? (e.g., fun, interesting, information, etc.)</li> </ul>
	Subjective norms on CGI-Is engagement (Beliefs identifying specific referents who think I should or should not perform the behaviour)	(Pelling & White, 2009)	<ul style="list-style-type: none"> <li>• What people are most important to you, with regards to social media usage?</li> <li>• To what extent do you feel social pressure to engage or not with a CGI-I?</li> <li>• What aspects influence this way of thinking? (conservative/progressive, culture (Bentley et al., 2021), demographics, etc.)</li> </ul>
	Perceived behavioural control on CGI-Is?	(Pelling & White, 2009)	<ul style="list-style-type: none"> <li>• To what extent do you feel in control with your engagement with [CGI-I]?</li> <li>• What impediments to engagement do you perceive?</li> </ul>

*(Beliefs identifying the facilitators for, or impediments to VI-engagement)*

- Did you perceive the CGI-I as such?
  - What response did provoke engagement?
- Do you think CGI-Is are visible on SNSs?
  - What effect does it have on your engagement?
- Do you think you are addicted to social media?
  - In what way does this affect your engagement with CGI-Is?

Drivers of PSIs on CGI-I engagement

(Mccroskey et al., 1975; Wang et al., 2008)

- What similarities exist between you and the CGI-I?
  - What made you choose this item?
- Have you ever felt lonely last month?
  - What role have social media in decreasing these feelings?
  - What role have CGI-Is in decreasing these feelings?

### Introduction AIG-I

*Before reaching the topic of AIG-Is, an introduction is provided by the researcher. The introduction included: "A self-guiding program which is associated with a celebrity status on social media and utilizes algorithms in order to create a persona which represents the target group and to post attractive and profitable content for the target group".*

3

Gratifications from AIG-Is

(Croes & Bartels, 2021; Kinnally & Bolduc, 2020)

- What is an AIG-I for you?
- What type of needs do you think AIG-Is can gratify?
- What made you choose these?
- (Uniqueness, entertainment, boredom, information seeking, irritation)

Attitudes towards AIG-Is

(Pelling & White, 2009)

- How would you evaluate the engagement with an AIG-I? (pos/neg?)

Subjective norms on AIG-Is	(Pelling & White, 2009)	<p>What advantages/disadvantages of engagement do you perceive? (e.g., fun, interesting, information, etc.)</p> <ul style="list-style-type: none"> <li>• What people are most important to you, with regards to social media usage?</li> <li>• To what extent do you feel social pressure to engage or not with an AIG-I?</li> <li>• What aspects influence this way of thinking? (conservative/progressive, culture (Bentley et al., 2021), demographics, etc.)</li> </ul>
Perceived behavioural control on AIG-Is	(Pelling & White, 2009)	<ul style="list-style-type: none"> <li>• To what extent do you feel in control with your engagement with an AIG-I?</li> <li>• What impediments to engagement do you perceive?</li> <li>• Did you perceive the AIG-I as such? <ul style="list-style-type: none"> <li>- What response did provoke engagement?</li> </ul> </li> <li>• Do you think AIG-Is are visible on SNSs? <ul style="list-style-type: none"> <li>- What effect does it have on your engagement?</li> </ul> </li> <li>• Do you think you are addicted to social media? <ul style="list-style-type: none"> <li>- In what way does this affect your engagement with AIG-Is?</li> </ul> </li> </ul>

## Appendix G

### Cohen's Kappa calculation

<b>Reliability analysis</b>			
<b>Interviews:</b> 14, 16, and 27			
<b>Date:</b> 03-10-2022			
Fragment	Coder 1	Coder 2	Final code
14.1	E1.3	E1.3	
14.2	D1.4	D1.4	
14.3	K1.3	D1.2	K1.3
14.4	J1.6	J1.6	
14.5	E3.3	E.3.3	
14.6	E2.2	E1.4	E2.2
14.7	I1.4	I1.4	
14.8	G1.1	G1.1	
14.9	K1.1	J1.4	J1.4
14.10	K2	K1	K2
14.11	M1.2	M1.2	
15.1	E1.3	E1.3	
15.2	H2.2	D1.4	D1.4
15.3	H1.2	G2.2	H1.2
15.4	H2.1	K1.1	H2.1
15.5	J1.4	J1.4	
15.6	E2.2	E2.2	
15.7	I1.4	I1.4	
15.8	G1.1	G1.1	
15.9	H1.2	H1.2	
15.10	J1.6	J1.6	
15.11	L1.4	L1.1	L1.4
27.1	E1.4	E1.4	
27.2	K1.4	K1.4	
27.3	K2	K2	
27.4	H3.1	H3.1	
27.5	J1.4	H3.2	J1.4
27.6	E3.3	E3.3	
27.7	E2.2	E2.2	

27.8	I1.5	I1.5	
27.9	H1.2	H1.2	
27.10	J1.1	J1.5	J1.1
27.11	M1.3	M1.1	M1.3

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## Appendix H

### Engagement drivers of professionals

This section discusses drivers of professionally involved respondents. This distinction with personally involved interviewees was created in order to prevent the engagement drivers to become distorted with motivations of communication professionals, students, and former clients, because these had other intentions and thus motivations to interact with CGI-Is than personally involved participants. Hence, this section sheds a light on why professionals engage with CGI-Is and the differences with personally involved respondents.

Professionals were exposed to CGI-Is in a different way, e.g., by reading an article about virtual influencers or through study lectures on this topic.

[50] *“I found Esther Olofsson via its creators, who posted an article about it on LinkedIn. The content of the article triggered me because the concept of virtual influencers has business value for me. So, I looked mainly from a business point of view, but also out of personal curiosity.”*

(P.23, male, about Esther Olofsson)

This way of being exposed is not very interesting in itself – although – there is an enormous difference with people who were targeted organically, via algorithms. For example, participant 23 (as illustrated above) was informed about the identity and goals of the virtual influencer. Personally involved interviewees were not able to identify the CGI-I immediately. This possibly influenced their motivations and eventually their engagement with a CGI-I.

Firstly, their exposure seemed to affect their motivation to visit CGI-I’s Instagram profile. Interviews unveiled that professionals showed this behaviour mostly since they were *intrigued* by the (non-)humanlike appearance of the account. Someone who was fascinated by Esther Olofsson’s non-humanlike appearance is illustrated with the following quote:

[51] *“I remember seeing her face and thinking: It really does look fake if you look closely. And with today's technological means, they could make it even more realistic. But, because I saw that she was fake, I thought: Okay, so they want us to see that it is fake. And with that, they might want to make something clear.”* (P. 24, female, about Esther Olofsson)

This quote describes that professionals were motivated to engage with CGI-Is because they were intrigued about the account’s profile picture. Participant 24 suggested “they want us to see it is fake”, which made her curious. The first part of her answer applies very well to the intentions of RauwCC, the creator of Esther Olofsson. However, their goal was to prevent their followers for feeling awkward –



but to the researcher's knowledge – no other arguments were underlying. This driver seems to overlap with professionals' driver to follow the account, which is found to be information seeking.

Several dimensions of information seeking were identified within this study's sample. It appeared that professionals were only inclined to know more about the account's *development* or to get *inspiration* for their own career. Most respondents wanted to see how this account would evolve in time, which is described by the following statement:

[52] "*I started following her out of professional interest and curiosity. I would like to see if it works. Let me put it this way, I was hoping it would work. And that I could learn how to make a virtual influencer successful.*" (P.23, male, about Esther Olofsson)

This quote suggests that people mainly followed CGI-Is because of their novelty aspect, which is likely to decrease in time as these accounts become ordinary. This also applies to the other subcategory of information seeking, seeking for *inspiration*. This group of respondents followed a CGI-I in order to provide themselves with inspiration for the relatively new CGI-Is for their own job. Obviously, this group mainly consisted of professionals and is closely related to information seeking about the development of CGI-Is. This is described with the following quote:

[53] "*I started following her out of professional interest and curiosity. I would like to see if it works. Let me put it this way: I was hoping it would work. And that I could learn how to make a virtual influencer successful.*" (P. 23, male, about Esther Olofsson)

In contrast to the personally involved respondents, professionals' motivation to follow a CGI-I was not affected by a positive evaluation of their FTE, according to the results. Professionals were rather negative about their experience due to two main arguments: *body positivity* and a *lack of authenticity*. This did not lead to disengagement, possibly since they were exclusively interacting for professional purposes.

Nevertheless, the results also revealed why professionals unfollow CGI-Is. This is explained by their *disappointment*. For example, respondents who used their following as source of information seeking purposes were disappointed about how little the account evolved. Others hoped the CGI-I to become more innovative in its content strategy than human influencers:

[54] "*If you actually scroll through the timeline of this virtual influencer, then you see the same as with other influencers, like: 'Look: this is nice wine' or 'look at these new boots I just bought'. So, I don't really care, and I'm not triggered to want more with this.*" (P. 19, male, about Esther Olofsson)

This quote sheds a light on an expectation of social media users in relation to CGI-Is. Respondents hoped to see different contents compared to human influencers before they followed – for example – Esther Olofsson. Hence – due to their innovative origins – it is likely that people expected more innovative ways to tell their story. Other interviewees felt disappointed by posts of CGI-Is as they were only “hanging out with friends” instead of “providing valuable tips”. One interviewee did not feel the excitement anymore to see the ‘good influencer life’. In order to prevent unfollowing, she argues that the account should do something to keep people thinking:

[55] *“I find her a bit obedient and boring. This is it. She just has neat clothes and lives a good influencer life. That only stimulates thinking in the beginning, but at a certain point that is no longer the case. So even though I find it creepy, the absurdism might be part of it. Maybe this virtual influencer needs to have plastic surgery in order to make people think about it.”* (P. 24, female, about Esther Olofsson).

This statement indicates that CGI-Is should persistently continue to trigger people, for instance by means of plastic surgery. Otherwise, it would result in unfollowing behaviour. However, this quote contradicts another statement of the same participant as she explained that ‘perfect appearances’ may hold back from following such CGI-I. Apparently, it is meaningful for CGI-Is to trigger people, although, this should not include aspects that detract from body positivity.

## Appendix I

### Normative beliefs

Thirdly, this research investigated whether or not subjective norms would affect social media users in their engagement with CGI-Is. Hence, respondents were asked to think of the most important persons in their lives. Then, they were asked whether or not their social environment would like, or dislike CGI-Is, and whether or not they thought their environment would follow such account. Outcomes provide little evidence that people's social environment affected someone's interaction with a CGI-I. Only two respondents thought their environment would like CGI-Is as well. One of them related this to her colleagues, who were also employed in the branch of computer graphics:

[56] *"My friends love it. We are all in the same industry, you know. One is an environmental authorized, another is programmer at Unreal Engine, which also does computer graphics. We are all fascinated with it, and we all follow her."* (P. 7, female, about Imma Gram)

The general sentiment among respondents was that their environment would not like CGI-Is as such. They sometimes related this to their conservative environments, e.g., Arabic culture, African parents, and living in a small village. One respondent told her friends about Lil Miquela and showed the Instagram-account to them, which produced negative reactions.

[57] *"I showed her to my friends and people react disgusted. It makes people feel weird, awkward, and uncomfortable."* (P. 2, female, about Lil Miquela)

Others thought their environment could like a CGI-I, but only when its content has relevance. For example, one participant thought his friends need something they can relate to in order to create some kind of connection. He might introduce an anime-focused CGI-I to his friends who watch anime. Another interviewee said:

[58] *"Maybe my fashion friend would like virtual influencers. Because when you look to the content, you could see it as a form of art, right? But if that person is not from the design industry at all, I would say it's a little bit difficult for them to relate to the concept of virtual influencers."* (P. 6, female, about Imma Gram)

Results show little evidence that significant others affect people's engagement with CGI-Is. All in all, normative beliefs are not seen as a driver of engagement with CGI-Is and thus excluded in the model.