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ORIGINAL ARTICLE

Virtual reality consumer experience escapes: preparing for the metaverse

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Abstract
Virtual Reality (VR) experience escapes allow individuals to spend hours on end in immersive virtual environments and interact with content in a world that is providing shelter and illusion of an alternative reality – the metaverse. Discussions on possible risks have largely remained limited to usability challenges, while only a few studies reflect on social, psychological and physical implications this immersive technology exposes and the considerations consumers and businesses need to take. This paper critically reviews literature on escapism to discuss issues in the design and employment of virtual reality consumer experience escapes. Key issues relating to VR experience escapes and resulting effects on consumer health and well-being are discussed, emphasizing needed consumer-centered research and design. Future considerations include (1) Self-indulgent escapism through VR consumer experiences, (2) Ethical considerations in the design of VR consumer experience escapes, and (3) Purposeful design of VR consumer experiences escapes. A sequential research agenda is presented that integrates antecedents of VR experience escapes that connect to three main future research streams; designing purpose-driven VR consumer experience escapes, complementing methodologies for VR consumer experience research, and meaningful VR consumer experience escapes.

Keywords Virtual reality experience · Escapism · Consumer-centered design · Research agenda · Metaverse

1 Introduction

Technological developments have changed the way society operates and how consumers interact with one another (Mishra et al. 2020). Recent advances in consumer technologies have not only granted convenience as a key benefit but have also greatly affected the pace of how we consume and process information on a daily basis. Facebook's Zuckerberg has recently announced the company's intention to move into the metaverse, building an alternative world completely in the virtual space (Newton 2021). Although such advancements open new possibilities in creating novel consumer experiences, potential negative consequences of emerging consumer technologies are often only discussed in retrospect. Previous studies recognized that our current fast-paced lifestyle can result in emerging mental health issues, but also in decreased physical activity leading to a rise in the prevalence of obesity, and other physical health problems which all contribute to the desire to escape these realities (Thoits 2010).

Virtual Reality (VR) was argued as the currently most prominent consumer technology to escape into an alternative virtual world (Han and tom Dieck 2019). Along with emerging experimental demos and use cases in the past years, we are at a stage where VR takes a more prominent role in technology-mediated consumer experiences globally. The technology is rapidly taking shapes that allow individuals to spend prolonged hours in immersive virtual environments and interact with content in a world that is providing shelter and illusion of an alternative reality – the

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metaverse. With Facebook as the first major company to announce its move into the complete virtual ecosystem, we are entering a new chapter on VR consumer experiences. From a technological standpoint, these are promising developments and prior studies investigating the consumer experience often reveal that VR experience escapes increase pleasure and behavioral intentions (Loureiro et al. 2021). Related technologies, e.g., Augmented Reality (AR) and Mixed Reality (MR) which, in contrast to VR, distinguish themselves through the interaction with the user's immediate surrounding, show similar developments. However, escapism in the employment of AR and MR has been arguably less impactful thus far, due to the nature of merging users' physical context with digital content. As such, escaping the real environment is typically not considered a key motivation for the use of these technologies. Instead, the focus has largely evolved around enhancement of the consumer experience (Lee et al. 2020) and implications on the learning process (Moorhouse et al. 2019), or customer engagement (Heller et al. 2021). Alcañiz et al. (2019) provide a research framework for virtual experiences in the marketing context in which research areas are subdivided into elements that characterize virtual environments through input of technical design and content input and assessment of virtual experiences leaning on quality assessment and consumer behavior metrics. Such frameworks are helpful in defining the area of research and contribution using relevant measures, but it does not provide priorities of focus of consumer research. Cowan and Ketron (2019) provide a framework for future VR research specifically for reaching the state of flow and highlight future research opportunities including avatars in VR, application quality and interactivity through a systematic literature review. Their study outlines a future research agenda based on a typology of relevant technical characteristics of VR in marketing. A similar perspective is provided by Loureiro et al. (2019), who conducted an analysis of 150 studies related to VR in marketing and concluded that the SOR (Stimuli-Organism-Response) framework is the most commonly used theoretical model in VR studies, while pleasure, arousal, telepresence and vividness of VR environments indicate that VR studies in marketing have largely focused on technological characteristics and consumer responses related to the buying process. Studies such as by Harz et al. (2021) are an exemplary case of VR studies in marketing that test mechanisms of VR for enhancing marketing metrics. Their study reveals that VR enhances consumer perceptions through presence and vividness that affect metrics including information search, product preference and buying behavior. Leaning on more recent revelations of negative consumer implications, e.g., mental and physical health complaints, in the context of internet and social media use, we need to draw our attention to potential consumer reactions beyond enjoyment early in the development of novel consumer technologies to avoid lasting negative consequences on the consumer and the context of use. It is therefore a fitting time to reflect, on not only the benefits and opportunities, but also on a more optimal consumer-centered approach to VR experience design and to examine possible consequences that VR experience escapes can have on the well-being of consumers. Discussion on possible risks have largely remained limited to nausea and spatial orientation (Mittelstaedt et al. 2020), and only a few establish the link to the psychological well-being thereof (Han and tom Dieck 2019; Riva et al. 2007). There is limited discussion on the actual psychological implications that VR could reveal and the considerations individuals as well as businesses need to be aware of when consuming and designing content in VR (Han and tom Dieck 2019). As a result, it is rather unsettling that we have such little understanding of negative psychological effects of escapism in VR that we might be seeing in the not too distant future.

While the need for further research in this area is often a suggested outcome (Riva et al. 2007), the nature of VR studies remains technology-focused and applied to specific sectors such as retail, tourism and healthcare. Suh and Prophet (2018) emphasized the need for further research on framing a research agenda to understand the negative consequences of immersive technology use. This paper will address the following research questions, what is the risk and potential of VR experience escapes in the consumer market, and how should VR consumer experience escapes be studied and developed to positively contribute to consumer health and societal well-being. While Suh and Prophet (2018) provide an elaborate review of immersive technology studies, this paper synthesizes literature on escapism through digital technology consumption and reviews key technological features of VR experiences that are integrated into a structured future research agenda for VR consumer experience escapes.

Escapism was identified as one of the key coping mechanisms to handle stress and strains of daily life (Henning and Vorderer 2001). Since the 1950s, escapism has become an important determinant when explaining motives of media content as a strategy that helps to avoid experienced psychological discomforts of the 'real' world (Evans 2001). In this respect, addiction to social media and online gaming as a specific form of escapism has been rapidly growing indicating concerning implications for societal health (Andreassen et al. 2016). We need to prepare for similar or even more severe effects of escapism through VR experiences, as it is the currently most prominent technology with the potential to immerse consumers fully into a virtually generated environment. As studies and use cases in multi-sensory virtual realities are increasing, the potential impact of this technology on the psychological well-being and the resulting ethical considerations is a topic in VR research that cannot be left ignored. This paper will contribute to knowledge by

synthesizing literature in virtual reality consumer experiences and escapism to date to present a research agenda to sequentially study and develop VR consumer experience escapes. In our paper, we discuss the need for consumer-centered VR experience escape design to make a positive societal contribution. With this, we contribute to future research in consumer studies by mapping out research directions for future VR experience research both conceptual and empirical in nature.

We propose the development of knowledge to study the role and consequences of escapism of VR consumer experiences to be fostered through (1) the underlying reasons behind escapism; (2) VR experiences as an immersive form of virtual escapism; (3) the effect of virtual escapism on consumer health and well-being; and (4) a discussion on the future development of studies in VR consumer experience research. We take a consumer-centered perspective by illustrating the impact of VR experience escapes on consumers' psychological and social well-being, rather than focusing on VR as the manipulator of the consumer experience. By taking this stance in VR research, we encourage emerging consumer technology studies to understand the motivations behind the use and adoption of emerging technologies. The discussion section reflects on the issues in VR research to date and aspects that deserve more consideration in future studies. We discuss the use of complementing methodological approaches to design consumer-centered VR experiences and conclude the paper with recommendations on the future approach to VR consumer experience research.

2 Literature review

2.1 Escapism

Escape theory posits that self-awareness of a problem may be so painful that an individual partakes in immediate, specific and self-destructive tasks like compulsive buying or binge eating as a means of escape (Yi 2012). Escapism refers to a need of people wanting to 'leave' the real world in which they live, both in a cognitive as well as emotional way (Henning and Vorderer 2001). This encompasses, for example, increased sleeping hours, the use of drugs and alcohol, different eating patterns and wishful thinking. Kuo et al. (2016) suggested that self-indulgent escapism could range from passive escapism (i.e., where a person acts as an observer, such as while watching a movie) to active escapism (i.e., where a person interacts with mediated realities, consequently being an actor). Self-indulgent escapism is often characterized by enjoyable content, such as presented in (online) games, which induces feelings of euphoria that help a person to get distracted from stressful stimuli and/or situations. Self-indulgent escapism has been demonstrated to be a rather ineffective and unhealthy coping strategy to deal with negative life circumstances (Panova and Lleras 2016). Psychological consequences of engaging in self-indulgent escapism can include, for example, depression and anxiety, increased aggression and lower self-control (Panova and Lleras 2016). Social consequences include lower interpersonal skills (Engelberg and Sjöberg 2004), social anxiety (Hardie and Tee 2007) and increased feelings of loneliness (Morahan-Martin and Schumacher 2003). These negative consequences can, in turn, reinforce the hardships of life and therefore strengthen the will to escape life. Such bidirectional relationship would represent a vicious cycle, which eventually can lead to even more detrimental effects on health and well-being.

2.2 Escaping through media use

Self-indulgent escapism suggests that online ICTs can facilitate a subjective mental escape from negative life situations and can help a person to cope with daily stressors of current society (Panova and Lleras 2016). Escapism motivation refers to someone who uses their time in the virtual environment to escape negative emotions, stresses, and real-life problems associated with their real worlds (Melancon 2011). This is much in line with the theory of compensatory internet use (TCIU), which suggests that people engage in excessive use of the internet when they feel like they are not being able to deal with psychological discomforts, resulting in a need to escape to an online world (Kardefelt-Winther 2014). A basic tenet of the theory is that the locus of the problem is the negative life situation experienced by the individual, such as stressful life events, which is compensated for by means of an ICT application. This theory takes the perspective of compensation rather than suggesting that the use of the internet is a compulsive behavior (Kardefelt-Winther 2014). TCIU has parallels to the self-determination theory (SDT) (Deci and Ryan 2000), which explains the underlying motivations of users in online activities and suggests that problematic internet use results from difficult life circumstances. The SDT postulates that these needs can be divided into three different types—relatedness, competence and autonomy. The internet is a platform that can satisfy each of these needs by, for example, facilitating interaction with other people via social media (relatedness), achieving higher levels in online games (competence) as well as providing the player with own choices and decisions in creating a virtual persona (autonomy). Online ICTs allow people to experience a virtual world, which fulfills their fantasies and helps them to connect with people in a fabricated cyber environment (Young 2009). In the context of virtual worlds, Yee (2006) identified escapism as one of the six motivations for user participation (along with relationship, achievement, manipulation, and immersion) that differ somewhat

according to certain user characteristics (e.g., gender). Hartl and Berger (2017) found that the user's personality trait of escapism (i.e. escapism tendencies to escape their reality) could influence the adoption of VR, while more immersive VR experiences are perceived to be more useful by escapists. The success of escaping into the virtual environment can be determined by the presence and the sense of being in another environment (Hartl and Berger 2017). This can be affected by the rendering, quality of the scene, quality of the Head-Mounted Display's (HMD) head tracking, and even how users interact with virtual objects (McGill et al. 2015). However, with the increasing quality of virtual experiences, it is crucial to re-focus on psychological and social issues to minimize negative consequences of current and future VR technologies that are rolled out in the consumer market.

2.3 VR experiences in the consumer market

The application of VR has enlarged considerably over the past decade and its usefulness is now being realized in various industries including retailing (Farah et al. 2019), healthcare (Moorhouse et al. 2019), education (Innocenti et al. 2019), tourism (Han and tom Dieck 2019) and entertainment (Lin et al. 2018). In retail, VR experiences help individuals become immersed into life-like scenarios where they can experience products, brands and services virtually by examining and manipulating the visual images, functions and features in various ways (Violante et al. 2019). The application of VR in retailing has received attention by researchers focusing on the benefits and opportunities of this technology (Farah et al. 2019). For instance, as a marketing tool, VR could help create memorable shopping experiences and generate satisfaction for users while the added immersion could potentially increase the levels of enjoyment and escapism (Yee 2006) and intensify the user's emotional experience. The increased affective dimension of the VR brand experience has led VR experiences to increase purchase intentions (Verhagen et al. 2014) and when mediated by presence, more vivid product representations have been found to elicit positive attitudes and positive behavioral intentions (van Kerrebroeck et al. 2017a, b).

Although many studies have explored the psychological effects of presence induced by technological affordances of VR, there has been limited attention on users' consumption of VR experiences and what meanings they construct post-experience. Given VR's ability to simulate real life, identities created using avatars in the virtual environment are expected to be salient and influence consumption in real life contexts (Lavoie and King 2019). As the use of VR in marketing continues to expand and impact the consumer experience, there is an ever-growing need to better understand the experience that VR delivers (Violante et al. 2019) and how the VR experience impacts the consumer on a psychological level. The immersive experience created by VR devices today allow for a more complete form of escapism to a new (virtual) world. It can trigger deeper emotional connections, which could have an even more profound effect than previous technologies. Table 1 summarizes prior studies of escapism in the virtual reality context. It is apparent that escapism has so far largely been regarded as a dimension that enhances the created experience through VR. However, discussion on the resulting consequences for engaging in VR consumer experience escapes is still underdeveloped.

2.4 Antecedents of VR consumer experiences

Prior research revealed that VR posed unique features that enables creating new types of experiences that extends prior media. For instance, Slater and Sanchez-Vives (2016) argued that immersion and presence were the two key factors that enabled VR to creates immersive experience escapes and distinguishing VR from other types of media adding to the perceived authenticity of virtual content by consumers (Guttentag 2010). Bhatt (2004) concurred, but added interactivity as a third profound aspect of VR. Steuer (1992) similarly argued that vividness and interactivity simulated telepresence in VR. It is worth noting that vividness in VR has been used interchangeably with immersion (Walsh and Pawlowski 2002).

Interactivity, "the extent to which users can participate in modifying the form and content of a mediated environment in real time" (Steuer 1992:14), was revealed to have a profound impact on how immersive a VR experience was perceived. Higher interaction dynamics, e.g., free manipulation of selected objects, can therefore create a more immersive experience through the freedom of control in the virtual environment. Kao et al. (2008) defined interactivity as the level of participation, representing "the degree of interaction between consumers and products, services, or environments during consumption" (p. 166). This postulates that a highly interactive virtual environment allows users to become part of the environment, instead of passive bystanders or followers of predefined instructions (Pantelidis 1993). Baños et al. (2004) concurred that the sense of VR presence to largely depend on immersion and interaction, as "being there" and "doing there". Hudson et al. (2019) further distinguish between the interaction with other participants of the experience and interaction with elements of the virtual environment and found that immersion mediates the interaction of the user with the virtual environment. A similar perspective is offered by Kuo et al. (2016) in the context of video games, suggesting that active escapism in this context is stipulated by more than immersion, as it offers an interactive component in the narrative of games. By engaging in the game environment, players feel the sense of presence in the mediated reality (Li et al. 2002).

Table 1 Prior studies of escapism in VR consumer experiences

Source	Study Context	Role of Escapism	Variables	Discipline	Key findings
Kuo et al. (2016)	Active escapism as a unique form of experiential consumption that engages fantasy and role-play as a means of coping	Active escapism as projective fantasy and mediated reality	Stress relief Fantasy and presence Consequences of escapism Active versus passive escapism	Video games Marketing	Active escapism functions as a coping mechanism when consumers are confronted with external stressors that threaten their sense of identity or sense of control. It provides the benefits of affirmation and empowerment through projective fantasy (i.e. role-play) and presence (i.e. immersion into a mediated reality)
Van Kerrebroeck et al. (2017a, b)	VR experience in shopping mall to investigate perceived crowding	Escapism through VR may provide a solution to crowding perceptions in the shopping mall. VR experiences in the mall temporarily allow consumers to escape from real hectic shopping mall surroundings and induce positive emotions	Attitude toward the mall Approach behavior Mall satisfaction Loyalty intentions Perceived crowding	Retail	Consumers respond positively on all measured outcome variables after being exposed to the VR experience. The effect on mall attitudes, satisfaction and loyalty is more pronounced when crowding is perceived to be high
Kircaburun and Griffiths (2019)	Mediating role of perceived feeling of presence and escapism in Problematic Instagram use (PIU)	Examining the mediating role of escapism in using various Instagram features and PIU	Social presence Spatial presence Co-presence Instagram escapism Problematic Instagram use	Health science	Escapism mediates the relationship between social, spatial and co-presence in problematic Instagram use. PIU is associated with the frequency of engaging with Instagram features to feel higher sense of presence and attempt to escape reality
Lee et al. (2020)	Testing the experience economy theory in the VR museum context	Escapism as one of the experience economy dimensions affect the VR museum experience	Education Entertainment Escapism Esthetic Overall VR museum experience Offline museum visit intention		Absorptive experiences have a great influence on immersive experiences and intention to visit the museum. An immersive VR environment enhances overall tour experiences. The study shows significant causality between absorption and immersion in light of VR environment features

Table 1 (continued)

Source	Study Context	Role of Escapism	Variables	Discipline	Key findings
Loureiro et al. (2021)	Investigating escapism and background music in a VR shoe store	Escapism experience is considered as stimuli in the S–O-R framework. As such, escapism is the main driver for cognitive and emotional states	Dominance Arousal Pleasure Behavioral Intention Cognitive Processing Escapism Presence Vividness	Retail Marketing	Escapism experience stimulates consumers' cognitive and affective state and increases pleasure. Consumers' sense of pleasure heightens the vividness and presence of the VR store, which positively affects their intentions

Flavián et al. (2019) further distinguish between interactivity and embodiment as key antecedents creating the user experience. As VR technology develops, devices are able to seamlessly integrate with users' bodies and affect their senses (Tussyadiah et al. 2018). *Technological embodiment* was defined as technology that "mediates the user's experience by becoming integrated into his or her body" (Flavián et al. 2021:2). Biocca (1997) and Shin (2018) revealed that embodiment, including the ability to involve human senses, was a key factor in generating immersive experiences. Shin (2018) further added that VR equipment that offers full immersion is largely driven by the sense of embodiment, creating the perception of the VR devices becoming part of the user's body. Technological embodiment in its mature form was posited to reach a state of human-technology symbiosis, which seamlessly blends and enhances human senses with technology (Raisamo et al. 2019). According to Tussyadiah et al. (2018), human-technology symbiosis occurs through the mediation of consumer experiences through embodiment of technological devices that allow consumers to perceive, interpret and interact with their immediate environment. In this definition, VR headsets signify a high technology embodiment through the physical wearability and engagement of senses. As virtual environments are able to integrate more senses through haptics and olfactory enhancements, we expect technological embodiment to take a more prominent role in staging VR consumer experience escapes towards reaching total immersion.

Immersion was defined as the phenomenon brought forth through VR in terms of the immersive properties of the system's ability in blurring the boundaries between the physical and virtual worlds (Hudson et al. 2019). Specifically, immersion is a "confluence of different psychological faculties such as attention, planning and perception that when unified in a game lead to a focused state of mind" (Cairns et al. 2014, p.28). The more immersed the person is in the type of media, the less they are aware of the world around them. The degree of experienced immersion depends on the fidelity with which the virtual environment is represented, particularly how closely the reaction of the VR system mimics the reaction of a real environment. Higher levels of immersion could enhance the viewer's transfer into the virtual environment to become fully immersed in the virtual world to temporarily escape from their real environment and feel a 'sense of being' in the virtual world (McGill et al. 2015). Lee et al. (2020) argued that in VR, immersion and absorption of the experience, which refers to the shift in attention of bringing the experience into the mind, are often occurring simultaneously. However, this is influenced by the user's willingness to engage in the experience, when absorption could precede the sensation of being immersed. Nonetheless, it has been mentioned that immersion is a self-sustaining state, meaning that the pleasures derived from it, sustain the will to remain

'there' (Cairns et al. 2014). Both Sheridan (1992) and Yee (2006) agree that immersion in VR is key to momentarily escape the real world. Baños et al. (2004) postulate that the level of immersion influences the sense of presence in the virtual environment. Although this feeling is subjective, it was revealed to be manipulable through the design of the virtual environment and use of VR system (Gutiérrez et al. 2008). Similarly, Flavián et al. (2019) argue that immersion is an antecedent of presence, depending on the technology's capabilities. This distinction is plausible considering the comparison between external and internal devices. However, in the scope of VR (internal device), Flavián et al. (2019) argue the level of presence to be much greater due to the immersive character of the technology.

Presence can be defined as the subjective experience of being in one place or environment, even though one is physically situated in another (Witmer and Singer 1998). The experience of presence is a complex, multidimensional perception formed through an interplay of multi-sensory information and various cognitive processes. Understanding the psychological experience of presence has long been central to the design of advanced virtual environments including VR systems (Kim and Biocca 1997) and over the years, many scholars have attempted to operationalize the concept of presence. Schubert et al., (2001) divide presence into three 1) spatial presence, 2) involvement, and 3) experienced realism. *Spatial presence* is the physiological feeling of being in a virtual environment, *involvement* refers to the attention for the virtual environment and hence feeling of participation, and *experienced realism* refers to the user's subjective experience of the virtual environment. Honegger et al. (2021) argued that experienced realism was particularly shaped through auditory stimuli, while in their study they pointed out that the effect and perception of presence in experiential realism was not only dependent on simply adding more sensory stimuli, but also subject to certain combinations of stimuli. Kim and Biocca (1997) postulated presence as transportation into two measures: *arrival* and *departure.* Arrival refers to the feeling of being present in the virtual environment and departure refers to the feeling of separation from the physical environment (Kim and Biocca 1997), which indicates that the user, because of the deeper sense of presence, temporarily escapes from the real world and into the virtual world. The sense of presence is the key feature for effective VR applications designed for persuasion because it could be a causal factor of human information processing performance and other cognitive variables (Kim and Biocca 1997). Research has indicated that presence influences the intensity of emotions felt in and induced by the virtual environment (Riva et al. 2007), which could lead to a higher desire for the real-life experience. The realness and sense of presence of the VR consumer experience are key factors behind the intensification of negative emotions (e.g., fear and anxiety) and the ability of these emotions to extend beyond the use of VR (Lavoie et al. 2020). Bystrom et al. (1999) proposed a conceptual model to determine what affects presence in the virtual environment. They revealed that the physical characteristics, e.g., visual resolution of the hardware as well as the level of immersion and sensory perception to enhance the sense of presence. It suggests that presence can be affected by functional as well as experiential quality. In the scope of this study, functional characteristics that have been identified in prior studies, such as efficacy, efficiency or effectiveness of the VR system (Kounavis et al. 2012) will not be further discussed as these are often hardware dependent. We expect these factors to increase consistently with the development of VR devices. Instead, we will focus on the antecedents that influence the experiential quality as these are expected to be manipulable by creators of VR content. Peperkorn et al. (2015) suggest that presence in VR environments can activate users' reactions, which makes it a highly valuable marketing as well as research tool to understand consumer behavior and to identify triggers for behavioral patterns. The availability of increasingly affordable and simpler VR systems means that VR is now more accessible to the broader consumer market (Hartl and Berger 2017; van Kerrebroeck et al. 2017a, b). Advancements are also being made to increase the social nature of VR, which enhances its ability to replicate real life scenarios (e.g., VRChat) (Lavoie and King 2019). As both VR content and hardware continue to improve and become more readily available, it is important to not only investigate the benefits of this technology for them but also the potentially negative psychological implications in the consumption of VR consumer experience escapes.

2.5 Implications of VR consumer experience escapes

As with many other ICTs, VR consumer experience escapes could potentially have several adverse effects on consumers' psychological well-being. However, due to the highly immersive nature of VR compared to previous technologies these effects will be amplified in the VR consumer experience escapes. This is supported by recent research indicating that participants who played a video game in VR experienced stronger negative emotions afterward compared to those who had played the game on a laptop (Lavoie et al. 2020). Negative side effects induced by using VR are not uncommon. Ensuring the health of consumers who interact with VR is important, as being ignored or minimized, could result in long term psychological effects. However, compared to the potential benefits of VR, only few studies have addressed the negative consequences of immersive technology consumption over the years (e.g. Wibirama et al. 2020; Nichols and Patel 2002). For instance, earlier VR studies

focused on psychological and social implications of VR consumption as much as physical or physiological effects (Nichols and Patel 2002). Some of the issues highlighted include addiction, physical injury or trauma, difficulties with re-entry into the real world after spending some time in the virtual environment, morality, participant self-esteem, and altering people's perceptions and interactions resulting in negative social implications due to misuse and abuse. More recently, studies have found that consuming VR content can lead to emotional harm (Lavoie et al. 2020), physical discomfort (Wibirama et al. 2020), eye fatigue (Cao et al. 2019) and reduced cognitive performance (Mittelstaedt et al. 2020). Although VR developers are conscious of the negative consequences of VR consumption including the physiological (e.g., motion sickness) side effects and the emotional side effects that may persist after the VR experience has ended, there is a risk of continuing to operate and develop VR experience escapes without fully understanding the implications of their products for consumers (Lavoie et al. 2020).

3 Discussion

Based on the reviewed literature, several critical issues emerge that deserve further discussion, 1) *Self-indulgent escapism through VR consumer experiences*, 2) *Ethical considerations in the design of VR consumer experience escapes*, and 3) *Purposeful design of VR consumer experiences escapes.*

3.1 Self-indulgent escapism through VR consumer experiences

Resulting from the pressures emerging from the fast-paced lifestyle of current society, more people experience an increasing desire to actively escape from their mundane routines and take a break from their lives. As reported in earlier research (e.g., Stanney et al. 1998), it remains pertinent that VR developers ensure that advances in this technology do not become at the expense of consumer well-being. For instance, MTV have their own virtual worlds that allow consumers to escape into a virtual representation of the television shows of their choice and interact with the show's characters (Melancon 2011). Similarly, 'Second Life' offers entertainment options such as movies and concerts that allow consumers to escape for longer in the virtual world. These examples are coherent with the motivation for self-indulgent escapism, where people look to avoid real life stresses by losing themselves in virtual worlds. However, the concern for the impact of the influence of self-indulgent escapism on consumer well-being and the potential addiction to virtual environments has been largely under-researched. In both reality and fantasy-based virtual environments, consumers may find escape through their avatars into a different world, whether that would be real or fantasy-based in nature. Reality-based virtual environments offer the opportunity for consumers to "live" a completely different life than their real existence, and there have been reports of individuals who are homebound for psychological or physical reasons being able to interact and lead lives that are more social through virtual worlds like 'Second Life' (Melancon 2011). VR experiences have the potential to replace real experiences in the future (McGill et al. 2015). They can evoke realistic responses in people and is fundamentally a "reality simulator". This means that consumers can be placed in a scenario that depicts potentially real events with the likelihood they would act and respond quite realistically. Immersive and realistic VR consumer experiences have been shown to affect people's thoughts, attitudes, and behaviors (Bailey and Bailenson 2017). Whether or not VR will be technically able to provide a genuine substitute for the real experience will have to be seen. The current development of VR additions (e.g., haptic, olfactory enhancements) certainly points towards this direction. VR is therefore an obvious consumer technology that is able to provide a form of self-indulgent escapism into virtual environments where certain real-world experiences are replaced because of the perceived benefits they provide (e.g., increased power, improved social interactions and relationships, attractive avatars). Hence, we should not only embrace the new possibilities through VR, but also define the role of VR consumer experiences and investigate potential health effects in society.

3.2 Ethical considerations in the design of VR consumer experience escapes

Similar to the design of games and social media platforms aimed at bringing consumers back to engage in the virtual space, businesses designing VR consumer experience escapes need to be considerate of the behavioral and potentially harmful effects VR experiences can have on the consumer as experiences moves from interaction towards immersion and enhanced presence in the virtual environment. Consequently, in experiences designed for VR presence, we expect psychological effects of VR experience escapes to have a higher impact on the consumer's engagement and well-being. It raises the question who will ultimately be responsible for harmful effects of psychological complaints. It is unclear whether it should remain the responsibility of consumers, despite businesses being aware of the possible risks of addiction and nonetheless designing VR consumer experience escapes in a way that stimulate the desire to return and embrace presence in the virtual environment. Providing the complexity of moral,

legal as well as business-related obligations, this question remains difficult to answer. A clearer indication of responsibilities is expectedly shaped as the technology becomes more defined and takes a greater role in consumers' lives. As an increasing amount of businesses are realizing the importance of experiences (see Pine and Gilmore 2011), there is a strong indication that clarity in this aspect is needed for experience designers in the online and offline environment. We advocate that businesses need to have a moral responsibility in designing VR experience escapes with the intention of enhancing consumer's lives. In this line of thought, the focus of the design should not remain on the interactivity level and the recurring user, increasing profit margins and the gathering of consumer data at the expense of the consumer's health. Instead, the design of VR consumer experiences needs to be aimed at making the lives of consumers profoundly better. Kheirandish et al. (2020) have emphasized a value framework that identify key human values to be considered by designs aimed at improving the quality of life. In their study using a human value survey, 'respect for others', 'meaningfulness', 'pleasure' and 'personal development' were identified as four of the nine key value groups important to consumers. Consumers should not only understand the information they are providing and how it will be used, they should be aware of the potentially negative physical, cognitive, or emotional consequences related to VR consumption (Lavoie and King 2019). To achieve this, we strongly advocate a co-creation process with the consumer and the consumer's well-being at the core from the initiation of such projects. A multi-stakeholder approach including relevant players such as the public body that would benefit from this initiative (e.g., lowering health related costs) should be at the same table to address opportunities and limitations in scalability and inform public policy. Although this notion has always been argued to be in the motivation of technology development, recent possibilities of exploiting data in an economy and society that defines success through the current form of capitalism seems to have shifted this mindset. However, such consequences are expected to result in a society with higher costs for medical and psychological treatments and would paradoxically negatively affect our economy. In the following, we propose that a more targeted and purposeful design of VR consumer experience escapes is needed that goes beyond the aim of interactive entertainment and consumption. The perspective of VR consumer experience design needs to shift from a design that aims to influence consumer interaction in the virtual space, to a design that embraces technological embodiment to create emotionally engaging and more fulfilling experiences through immersion and presence that can contribute to the well-being of consumers and wider society.

3.3 Purposeful design of VR consumer experience escapes

VR applications as well as other software solutions are often developed using rapid prototyping techniques. It offers the opportunity to develop and launch products in a shorter time period while being constantly tested and adjusted by potential users in the process. Although this approach aims for fast product development at potentially lower costs, there are several issues that this method does not address. Since rapid prototyping is based on the testing of working prototype applications, they might limit user perceptions and feedback to the context and features of the prototype. As a result, users are pre-framed into what the final product should be offering, without considering alternative options that might better address existing problems or opportunities. Consequently, the adjustment to the prototype is usually based on a 'better' version of the existing product or experience, rather than a better solution. Such a process of developing VR consumer experience escapes limits the potential to create meaningful experiences that can add to consumers' well-being, since opportunities that could increase the value and meaning to consumers are overlooked.

VR consumer experience escapes need to be designed with a specific purpose in mind that adds to the well-being of consumers. However, it remains a challenge for many businesses to design experiences that are perceived to be meaningful. We propose the use of design methodology to assist in the quest of designing VR consumer experience escapes that are driven by purpose and well-being of their consumers. A systematic design process has been recognized as a method suitable to design services and resulting experiences (Smit and Melissen 2018). Going through every step of the process, it allows for the investigation and identification of problems and opportunities at the core of the design that are crucial for the consumer. Cross (1994) suggests a 7-step approach that is initiated with clarifying objectives, before it is followed by the remaining steps, establishing functions, setting requirements, determining characteristics, generating alternatives, evaluating alternatives and finally improving details. According to Cross (1994) the first three steps of the process aims at identifying the problem at its root in order to design solutions that tackle the problem at its core. Since the objective is to design VR consumer experience escapes that are not only perceived to be valuable but also add to the well-being of consumers, the understanding of the problem and resulting objectives of the design are crucial for the outcome. However, it remains a challenge to develop solutions adding to well-being into the design. The challenge lies in the complexity of defining and measuring well-being of consumers which is closely attached to the individual's emotional state.

It would be implausible to expect the VR experience escapes to result into a comparable state of well-being for all types of consumers. Instead, VR experience escapes should add to well-being by creating opportunities for various consumers. For instance, VR was used to assist immobilized patients to travel to destinations virtually. It was revealed that such solutions had a positive impact on the life of patients, as it opened a possibility to escape the walls of a hospital or one's own home and recall the feeling of freedom once more (Lindner et al. 2017). Although great for this type of consumer, the same VR experience escape does not result in the same positive impact on other types of consumers. On a tactical level, attracting people into the virtual environment could possibly limit the physical and inter-personal skills necessary for maintaining a healthy and socially active lifestyle. Such limitations can often be found in addiction to online games spending hours and days in the virtual world and lack sufficient physical and social activity, resulting in lower interpersonal skills, social anxiety, increased feelings of loneliness and psychological consequences such as depression (Kuss et al. 2012). Instead, we propose that VR consumer experience escapes need to start with the intention to encourage positive relationships and stress relief on a tactical level. Additional research approaches are needed in the analysis and evaluation of such experiences that can provide an insight into not only the rational but also emotional state of consumers. We advocate that this additional layer of knowledge is necessary to develop VR experience escapes that can add to the overall health and well-being of consumers with a subsequent effect on society.

4 Research framework

Following on the topics of the discussion, we propose a sequential research framework (Fig. 1), that sets the direction for future research. Research streams range from a tactical level focusing on the well-being and skill development of the individual through virtual environments to creating positive societal impact in VR experience escapes. In our framework, we propose the key antecedents of VR experience escapes (interaction, technological embodiment, immersion, presence) to provide focus in developing consumer-centered research in this field. As we move from interaction towards presence in VR experience escapes, we advocate the use of complementing research methods to capture the importance of emotional engagement in the consumer experience.

5 Research Agenda for VR consumer experience research and development

We have argued that studying VR experience escapes requires a consumer-centered approach. This paper presents a research framework for a consumer-centered VR research agenda aimed at creating a positive contribution to wider society. We outline a three-step research approach that can guide the future research agenda and contribution to knowledge in this field. In the first step, we outline how purpose-driven VR consumer experience design through a design thinking process can target consumer health and well-being from a social, psychological and physical standpoint. In step two, we recommend further research using complementing research methodologies to capture not only consumers' rational experience evaluation through self-reporting assessments, but also emotional indicators through physiological responses to measure how experiences trigger and stimulate emotional responses in the timeframe of VR experience escapes. Both indicators were found to play a crucial role in escapism experiences. As a third and final step, we propose further research studying the societal consequences from VR experience escapes and discuss how VR can be used as mechanism to create societal impact.

5.1 Designing purpose-driven VR consumer experience escapes

The presented research framework assists in illuminating the process by which a consumer-centered VR experience escapes can affect social development, psychological development and physical development of consumers. We need to swing the pendulum back and not focus on the harmful effects of consumers' engagements with virtual entertainment forms, but rather outline ways through which VR experience escapes can enhance consumers' health in these three domains.

Firstly, rather than focusing on the negative impact of engagement with VR on the social skills of individuals (e.g., lower interpersonal skills, increased feelings of loneliness and anxiety problems), we argue that VR consumer experience escapes are not necessarily a solitary act. Rather, we propose that such escapes can contribute to the development of virtual communities and therefore enhance social capital. This phenomenon has already become evident in gaming situations (Yao and Chang 2014). Virtual communities would allow for real-time mutual support, information sharing and enhance interaction. Global VR communities can therefore become the basis for international, face-to-face discussions with citizens all over the

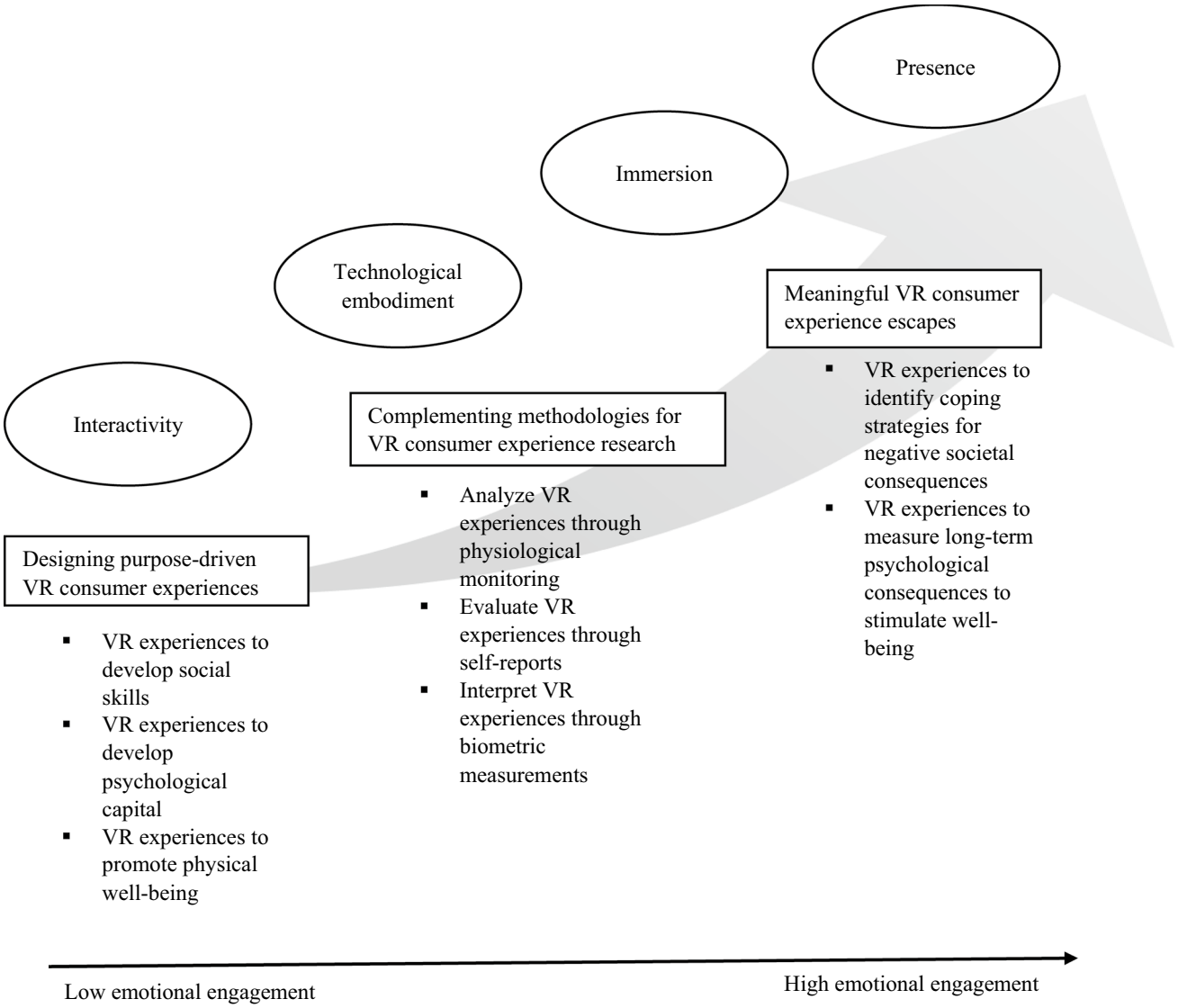

Fig. 1 Future research directions for Virtual Reality consumer experience escapes

globe. Recognizing that VR consumer experience escapes can create face-to-face interactions, we advocate the support of interventions where consumers can meet peers and engage with them based on common interests. This would be an attempt to develop VR communities that foster social support by providing a shared online space that helps consumers to relate to each other in meaningful ways (Schott and Hodgetts 2006). VR applications are just starting to explore social VR spaces, which opens an opportunity for researchers to empirically test the role of social virtual environments to foster social skills.

Secondly, consumer-centered VR experience escapes would allow for the development of psychological capital, by enhancing self-efficacy, self-control, life-satisfaction and self-esteem. More specifically, we endorse Schott and Hodgetts (2006) call for the development of (virtual) game technologies that raise performance levels in sectors of education and training. They argue that digital games can be used to enhance both cognitive and dexterity skills which, in turn, would enhance a person's self-esteem and self-efficacy. We propose that experience escapes in VR adds another layer to learning and development by providing an increased sense of active involvement in the virtual environment, assisting consumers to learn new skills, which he or she can later adopt in everyday life. Finally, as the majority of the research has focused on the detrimental consequences of digital environments on peoples' physical wellbeing, such as an increased sedentary behavior which contributes to the problem of obesity (Stettler et al. 2004), as well as epileptic seizures (Millett et al. 1997) and physical injury (Macgregor 2000), we argue that consumer-centered VR experience escapes can also positively address obesity and

diabetes. More specifically, the development of VR experiences that are designed specifically for healthcare can include the development of interventions that help people to engage in virtual physical activities and can address the social aspect by stimulating collaborative exercise by the engagement in virtual exercise communities. In this field, we urge researchers to propose and empirically test the effect of VR experience escapes to promote physical activities and stimulate physical well-being of consumers. Future research should explore whether such virtual experiences can change lifestyle behaviors or replace the need for physical exercise. Ideally, as in VR healthcare research (e.g., Moorhouse et al. 2019), these VR experiences would also capture psychophysiological data that extracts data such as heart rate and respiration, which could help to monitor a person's daily stress levels and levels of anxiety.

5.2 Complementing methodologies for VR consumer experience research

There is still some debate on how consumer experiences in general and more particularly VR consumer experiences should be examined. In experience studies, one of the limitations of self-reports was identified as the lack of understanding of what occurs consciously and unconsciously in the time of experience consumption (Bastiaansen et al. 2019). As answers provided in self-reports are based on participants' memory and rational evaluation of a particular experience, it fails to capture other stimuli or emotional responses at the time when the experience takes place, creating a gap in our understanding of what a particular experience in the physical and virtual world entails. Literature from psychology offers some perspective on how consumer experiences can be studied. According to Kahneman (2011), emotions were identified as key elements within an experience. While numerous studies investigate VR consumer experiences based on the virtually generated environment or social elements that can be stimulated in the VR experience, little is known how emotions associate with external stimuli in VR experience escapes. Taking a perspective originating in experimental psychology and cognitive neuroscience, we propose further research in this field to henceforth employ objective or direct measurements such as physiological or performance monitoring in addition to self-report measures. We propose the use of complementing methodologies originating in psychology and neuroscience to measure the impact of VR experience escapes on psychological capital. For instance, Bastiaansen et al. (2019) propose the use of electroencephalography (EEG) to measure brain activity that occur based on external stimuli. Complementing these measures with biometric measurements such as facial expression (Cohn et al. 2007), heart rate (Appelhans and Luecken 2006) and skin conductance (Bradley et al. 2008) monitoring could offer some insights into how dynamic emotional responses shape the escapist experience in VR. In a more practical sense, this could include determining a maximum heart rate that should be experienced by participants within VR experience escapes. For self-report measures, specifying a maximum number of reported symptoms that indicate a high level in a user could be used as signal of addiction risk to the immersive virtual environment. Recommendations regarding time spent in VR experience escapes and the design of such experiences should be considered to reduce negative psychological and physical consequences of VR experience escapes. Furthermore, since some people might be specifically disposed or prone to addictive behaviors and any detrimental consequences of media consumption could depend on one's pre-existing levels of certain psychological health problems, future research should consider individual-level variations in different health indicators. Along these lines, Shin (2018) argues that VR experiences and the role of immersion is highly dependent on consumers' individual intention. This influences perception of presence in the virtual environment and how they accept VR stories. To develop this knowledge, we need better insights into the black box of immersion and consumers' emotional engagement in the immersive experience. While one of the limitations of using psychophysiological measurements was argued to be the necessary lab-setting, VR experience escapes could prove to be the complementing environment to facilitate the lab setting. However, to the best of our knowledge, the use of complementing methodologies using physiological measurements have not yet made a breakthrough in the field of psychology for VR consumer experiences. We therefore propose further research in this field to better understand how VR experience escapes trigger emotional responses in consumers and in turn to better design VR environments in a more purposeful and memorable way.

5.3 Meaningful VR consumer experience escapes

As VR experiences become increasingly accessible to the public, consumers have the option of spending extended periods immersed in VR experience escapes. Some of the risks and ethical concerns have been outlined earlier in this paper. However, further research in this field is required to provide empirical evidence of potential long-term negative consequences and to better understand the psychological effects that extensive consumption of VR experience escapes might cause to well-being.

Due to the sense of presence fueled by interaction, technological embodiment and immersion created in VR, neuropsychological underpinnings of VR addiction might differ from that in other forms of consumption, which means that treatments and strategies for internet addiction, such as providing users with information of how much time they have

spending online playing games and potentially Cognitive Behavioral Therapy (CBT) techniques may or may not be effective for immersive VR consumer experience escapes (Young 2009). Therefore, further research is required specifically to identify coping strategies for possible VR addiction taking into consideration individual's specific cognitions (e.g., coping styles/poor coping and cognitive expectations). The psychological impact of full immersion and presence in VR experience escapes is projected to have a great impact on the well-being of consumers far more than other forms of media, which means that researchers, developers, and industry professionals must collectively take steps that will help consumers avoid suffering psychological trauma of various kinds. However, as previously discussed, despite the ethical challenges associated with VR development, there is great potential for VR experience escapes to have a positive impact on society with consumer well-being at the core of the experience. While empirical evidence is still limited at this stage, we call for researchers to also take ethical precaution beyond the practical perspective, e.g., the risk of motion sickness by gaining informed consent for the potentially lasting psychological effects specific to the experiment being conducted. As such, we advocate future research to investigate how VR experience escapes can be designed to be meaningful to consumers and society. In particular, we propose using existing and designing new VR experience escapes for research purposes to identify coping strategies for negative societal consequences. Along these lines, we recommend longitudinal studies for better understanding the risks and psychological effects on well-being associated with prolonged consumption of VR experience escapes, as well as ethical considerations, and stronger emotional engagement through the sense of presence. This area of knowledge requires much development in order to take a pro-active approach to the design of VR experience escapes.

6 Conclusion

We drew upon the theoretical insights and empirical evidence from literature on escapism to provide a nuanced and more ethical depiction of VR consumer experience escapes and its potential role in consumer health and well-being. Current environmental and social conditions, such as a fast-pace lifestyle give rise to maladaptive coping mechanisms including self-indulgent escapism. The need to escape is the driving force to search for alternative realities, which can be found in VR consumer experience escapes that are increasingly developing into a metaverse. Engaging in fully immersive virtual worlds where consumers can experience a heightened sense of presence can evoke feelings of euphoria and stimulate addiction to the content. While the presented discussions in this paper remain conceptual in nature, and therefore the limitations of the proposed future research streams should be acknowledged, we believe that negative psychological consequences of VR consumer experience escapes in the metaverse will affect social interactions as well as consumers' physical and psychological well-being. Inevitably, it will affect peoples' ability to cope and function in life.

Theoretically, this paper contributes to knowledge particularly in consumer research by presenting key research directions for virtual reality consumer experience escapes in the metaverse. As we become more aware of the possible detrimental consequences of VR on the psychological and physical well-being of consumers, such concepts need to be integrated in future VR consumer experience research. Resulting from this paper, we propose future research in three distinct areas. Firstly, we urge future studies to examine the effect of purpose-driven VR consumer experience escapes by proposing and empirically testing the effect of virtual experience escapes to promote consumers' physical, psychological and social well-being. Secondly, we argue that mutually supportive research is needed to better understand consumer experience escapes in VR and resulting effects on consumers as they develop into the metaverse. In this regard, we recommend the combination of self-reports and measurements of biometrical and physiological indicators to capture and better deconstruct a bigger fraction of the consumer experience in VR than with reflective indicators alone. Thirdly, and finally, we call for further research to understand the risk and potential of VR experience escapes on wider society. In our conceptual paper, we argue that consumer-centered VR experience escapes have the potential to result in positive societal implications. However, more empirical research is needed to identify specific indicators and implications of social change through VR experience escapes as well as potential risks due to the extensive consumption thereof. Practically, this paper provides VR consumer experience designers and businesses with insights and implications on the potential harmful effects that VR experiences can have, if not carefully designed. This is particularly important for businesses that are expecting to take part in the metaverse. It identifies key areas where consumer-centered VR experience escapes are much needed and outlines various ways to approach the development of such. In preparation for upcoming developments in the metaverse, businesses have a moral obligation to consider the psychological and behavioral effects VR experience escapes will have on our lives and society and should address them with the intention of consumer health and well-being in the center of the design.

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