THE VIRTUAL YOU: EXPLORING MENTAL WELL-BEING THROUGH ONLINE REPRESENTATIONS

University of BRISTOL

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1 Online self-representation is both a possibility for liberating self-expression and a pressure to comply with norms and gain audience approval.

2 An idealised online self-representation typically worsens individuals' mental well-being, while an authentic expression is associated with increases in self-acceptance.

3 There is a growing trend – particularly among young people - of inhabiting virtual worlds as avatars, often appearing in some ways different from how they are in real life.

4 Forms of online representation are increasingly more diversified and potentially fragmented through the rise of avatars.

5 Avatars display certain visual styles, such as excessive beautification, cartoonisation and infantilisation. There is a risk of such trends spilling over into real-life appearance norms.

2 | INTRODUCTION

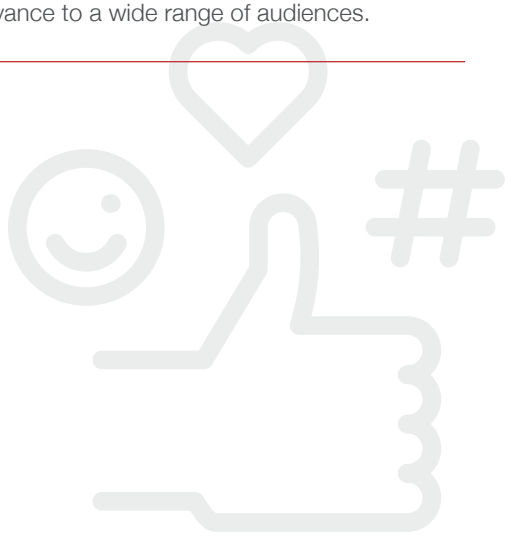
The aim of this report is to provide an overview of some of the key challenges related to how individuals construct and manage their online representation, also regarded as their 'digital' or 'virtual selves'. It examines identity-related phenomena across online spaces – including social media, immersive technologies, and virtual environments – which are evolving at an unprecedented pace and are increasingly shaped by AI. It also examines the link between individuals' online representation and their mental health and well-being while highlighting that the pace of legal and regulatory frameworks to combat the issues in this space is lagging behind technological advancements. Finally, it outlines key areas that require further investigation, focusing particularly on avatars as the latest self-representation phenomenon.

3 | OUR APPROACH

This report's content is based on comprehensive secondary research enriched by primary research activities. Initially, we reviewed existing literature and policy work related to online self-representation and mental health and well-being – with mental health encompassing emotional, psychological, and social wellness, and well-being specifically referring to positive aspects like purpose, contentment, and life satisfaction [1], [2]. This allowed us to map the current research and legislative landscape and identify emerging trends.

To build on these insights, we conducted three stakeholder workshops between June and October 2024. We deliberately broadened our stakeholder engagement to capture perspectives across different sectors and usage patterns. The first two workshops brought together academics from marketing, psychology and human-computer interaction as well as industry partners, inviting them to discuss the role of online self-representation in shaping individual identity and the potential influence on real-world interaction. In the first two workshops, we relied both on synchronous discussions as well as an interactive online board where participants expressed their views and shared their comments. Given that young people aged 16-24 spend a significant amount of time using social media (averaging more than 3 hours a day [3]), the third workshop's key participants were university students. It was run in partnership with Holition (a London-based digital retail agency) and London College of Fashion with the aim of prompting reflection around contemporary online and virtual self-representations. Students explored key questions through group discussions before crafting visual collages that depicted their digital selves.

Throughout the report, we incorporate direct quotes from workshop participants, giving life to firsthand perspectives. Moreover, key workshop participants also co-authored this report, helping us integrate multiple stakeholders' viewpoints and thereby enhancing its relevance to a wide range of audiences.



4 | HUMAN REPRESENTATIONS ACROSS ONLINE ENVIRONMENTS – KEY PHENOMENA

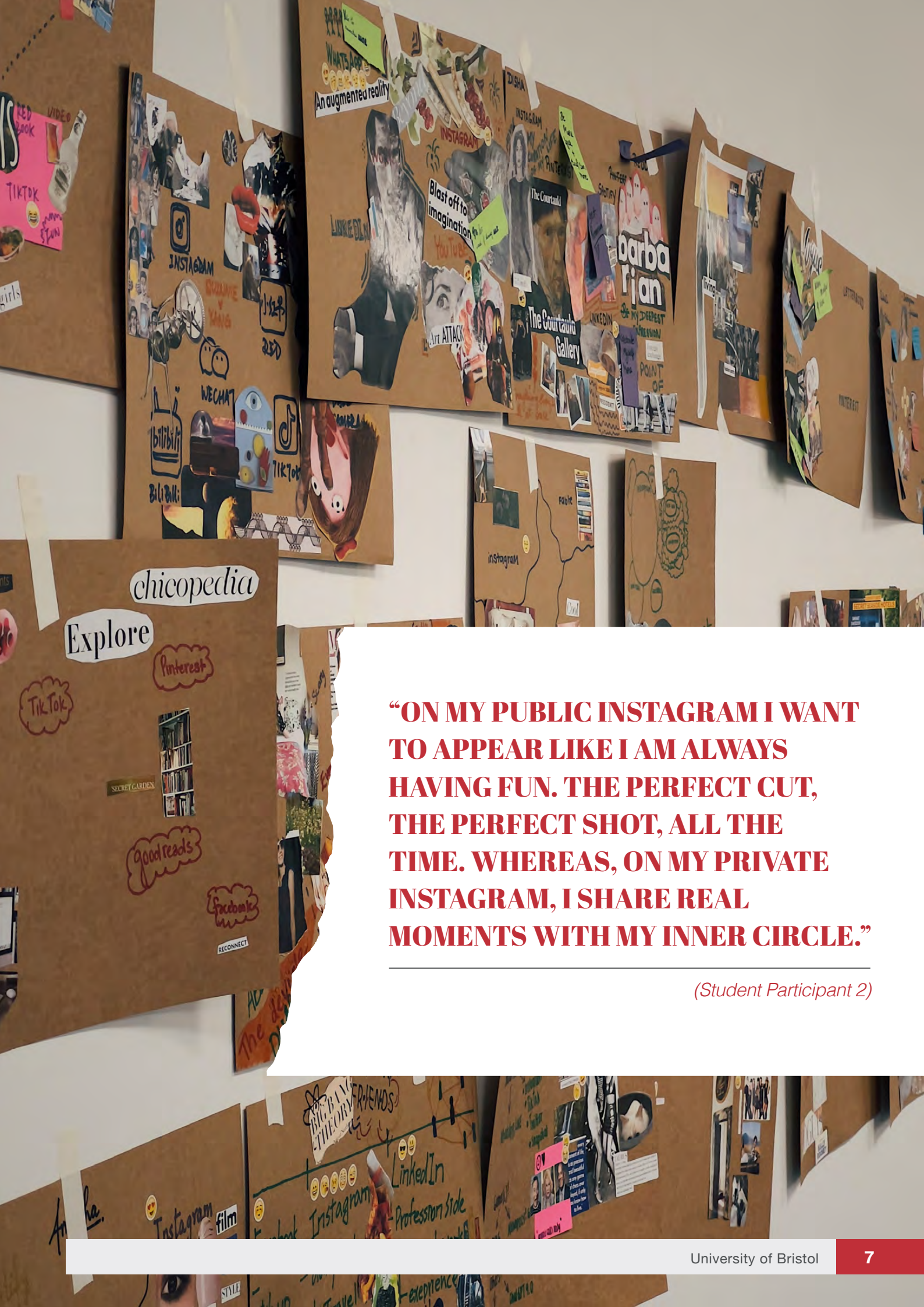
Before online social and gaming spaces, individuals had a limited arsenal of tools they could use to represent themselves on the internet – such as a username, a short description of themselves, and a photo or icon. Since the emergence of online games in the 1990s and particularly social media in the early 2000s, people have been confronted with new forms of online representation. These representations range from depictions such as photos and videos of oneself to virtual recreations such as avatars or memojis. In addition to these visual entities, online representations also comprise any activities that express individuals' values, preferences, and interests. This includes social media posts and comments, interactions and behaviours in virtual environments, conversations on private messaging channels, forum contributions, and more – all communicating and presenting the self, often with notable differences depending on the platform or context.

Examples of student participants' collages created at "Crafting Your Digital Self Workshop" (Holition, October 2024)

Social Media

Over the last two decades, individuals have increasingly flocked to social media platforms to represent themselves to their online audiences, be that through selecting the best selfies out of the tens of photos taken for this purpose; carefully curating travel content for social media, with some even choosing destinations specifically for their 'Instagram-worthy' photo opportunities; recording short, silly videos for TikTok or Snapchat; or sharing daily lifestyle highlights through Instagram Stories – the list goes on. These varied forms of self-representation communicate different aspects of self-concept, which is a key psychological construct combining the beliefs, feelings, and thoughts we hold about ourselves [4]. On the one hand, social media and other online spaces have been praised for giving one the opportunity to show their true self which one may be unable to channel in the real-world environment [5]. This is also enabled via the anonymity of some spaces like online fora, which often fuels the expression of views that would otherwise be left unexpressed, for better or worse [6]. However, a counterbalance to these seemingly endless opportunities for self-expression is the pressure to depict one's best or even ideal self – the version of oneself that one aspires to, even if it is not who one really is [7] – in order to gain popularity and approval [8]. This types of self-enhancement have been increasingly monetised through influencer culture and entrepreneurial opportunities, where cultivating the 'perfect' online presence can translate directly into financial gain [9], [10]. When it comes to professional networks like LinkedIn, this pressure manifests through the strategic publicising of one's professional achievements [11].

> **"EACH SOCIAL MEDIA PLATFORM I USE OFFERS A UNIQUE WAY TO EXPRESS MYSELF."**
>
> *(Student Participant 1)*



"ON MY PUBLIC INSTAGRAM I WANT TO APPEAR LIKE I AM ALWAYS HAVING FUN. THE PERFECT CUT, THE PERFECT SHOT, ALL THE TIME. WHEREAS, ON MY PRIVATE INSTAGRAM, I SHARE REAL MOMENTS WITH MY INNER CIRCLE."

(Student Participant 2)

Augmented reality filters

Immersive technologies have brought a new dimension to this phenomenon. One of the most popular applications of augmented reality (AR) has been face filters, which allow individuals to modify their appearance in real-time through playful effects, beautification tools, and creative transformations. Our research shows that individuals use filters when trying to make themselves look more attractive or 'perfect', rather than for creative fun or true self-expression [12]. This behaviour is particularly pervasive among young people, with 80% of girls having already applied a filter or used a retouching app to change their appearance in photos by age 13 [13]. Moreover, internal industry research by Holition revealed that many young Chinese consumers rely on beautifying filters to enhance their appearance, to the extent that many feel uncomfortable sharing content without a filter, even with close friends. AR filters have also gained popularity in e-commerce and retail, allowing shoppers to virtually try on different apparel, fashion items, and make-up before purchasing [14]. They can greatly improve shopping experiences by facilitating decision-making easier and increasing enjoyment. However, viewing one's face as virtually enhanced can also affect the way individuals think about their offline self, for instance making them less accepting of their real-life 'flaws' [4].

Virtual environments

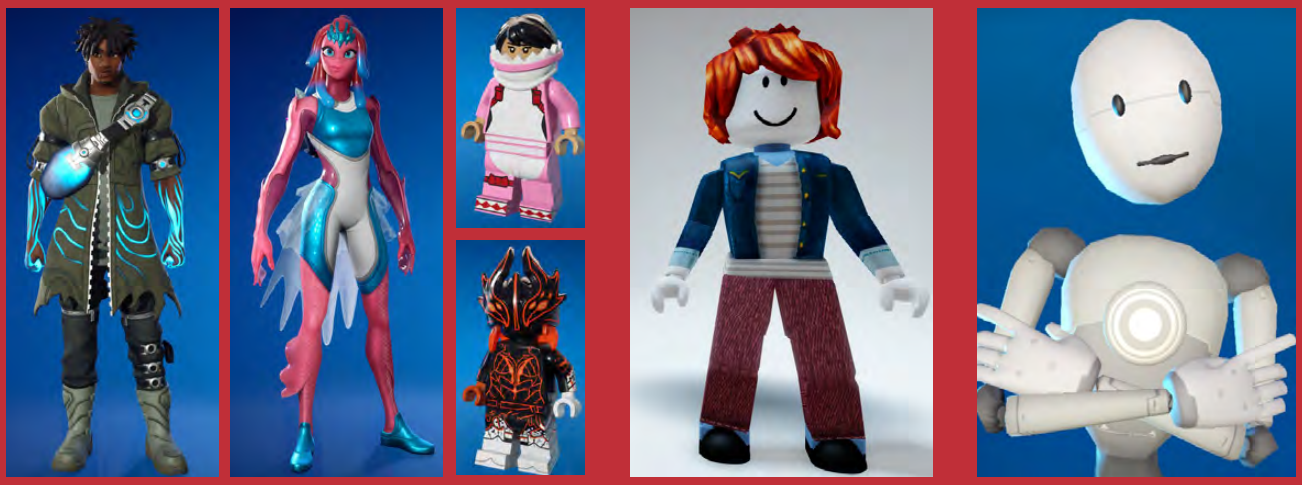
Virtual environments, which unlike AR's overlay of digital elements onto the real world are completely digital spaces ranging from gaming platforms to social worlds (whether accessed through regular screens or virtual reality (VR) headsets), have provided an even broader canvas for digital self-expression and play. This self-expression manifests through avatars – digital entities representative of individuals in such environments. An individual's avatar can either resemble them, be completely different from them, or anything in between. With a variety of virtual environments comes a variety of avatar types – they can appear realistic, fantastical, human or non-human-like, and so forth [15]. While some individuals create avatars that closely represent or idealise their real-world appearance, others choose to express themselves by appearing as someone entirely different [16]. It is also important to recognise that the discourse around the 'metaverse' – the next generation of web envisioned as a combination of 3D virtual environments focused on social connection and immersive experiences – imagines such avatar customisation to embody a wide range of human traits. However, in reality, most customisation focuses on appearance, often overlooking the diversity of human bodies and neglecting personality or cultural traits [17]. This emphasis on appearance has extended into the presence of virtual fashion in environments like Roblox and Fortnite, where individuals can purchase digital clothing and accessories for their avatars [18] – a trend deemed particularly important by fashion and gaming industry leaders.

> **"Is having a vast palette of features (accessories, colours, hairstyles, clothing, etc) good or is less more so that users focus on the activity of communicating, playing rather than dressing up?"**
>
> *(Academic Participant 1)*

Online representation - a key component of digital identity

How individuals represent themselves online only partially constitutes their digital identity. According to the World Economic Forum, other key dimensions of an individual's digital identity are personal data and personal identifiers (such as credentials or forms of ID) [15]. As technologies evolve, new dimensions of identity will continue to emerge, as evidenced by developments like non-fungible tokens (NFTs) which serve as unique digital certificates of ownership and authenticity, enabling individuals to establish verifiable digital property rights [19].

While the many differing possibilities for online human representation are exciting and seemingly offer endless possibilities for individuals to exist online and virtually, the questions 'Who am I?' and 'How do I represent myself online?' should be considered in a wider context. What positive value might they bring to individuals in terms of making them feel better about themselves, improving their mental health? Or, worryingly, how might they deteriorate it, leading in some cases to mental health disorders? While increasing research is concerned with the link between technology and mental well-being in general terms, thus highlighting the importance placed on this in today's society [20], we focus specifically on the link between how we represent ourselves online and these aspects.



Avatar examples from the platforms Fortnite, Roblox, and VRChat (left to right).

5 | THE LINK BETWEEN ONLINE SELF-REPRESENTATION AND MENTAL HEALTH AND WELL-BEING

Mental health is a broad term that refers to emotional, psychological, and social well-being [1]. It covers both the presence of mental wellness and the absence of mental illness and for instance includes the ability to handle stress, relate to others, and make decisions. Mental well-being, a subset of mental health, refers to the positive dimensions of this spectrum, encompassing an individual's sense of purpose alongside feelings of happiness, contentment, and fulfilment that together contribute to a satisfying life [2]. Importantly, mental health and well-being are intrinsically linked to physical well-being, with research showing that psychological states can significantly impact body perception, physical comfort, and overall physical health outcomes [21].

Positive effects of authenticity

One key aspect regarding the link between online self-representation and mental health is the role of authenticity. When individuals represent themselves authentically, aligning their digital selves closely with their true selves, it can lead to improved mental health and well-being. For instance, it can help individuals maintain and form genuine social connections, with recent research showing that 80% of teens report feeling connected to their friends' lives through social media, and 67% find support there during difficult times [22]. This proved especially significant during the COVID-19 pandemic when digital platforms became primary spaces for socialising during periods of physical isolation [23], [24]. Sharing real thoughts, experiences, and feelings within said networks can also validate an individual's identity, thereby bolstering self-acceptance and self-esteem [25].

Moreover, for individuals who feel marginalised or misunderstood in their offline environments, online platforms can provide space for the parts of their identities that they may not feel safe or confident revealing in their everyday lives [26]. For instance, many transgender individuals find virtual worlds like VRChat invaluable as they can safely, gradually and authentically express their true gender identities in the virtual queer community, which they may not feel confident doing offline [27].

> **"But when I discovered my worth and valued it, that's when my relationship with social media really changed... and I started being myself."**
>
> *Student Participant 3*

Traps of ideal self-representation

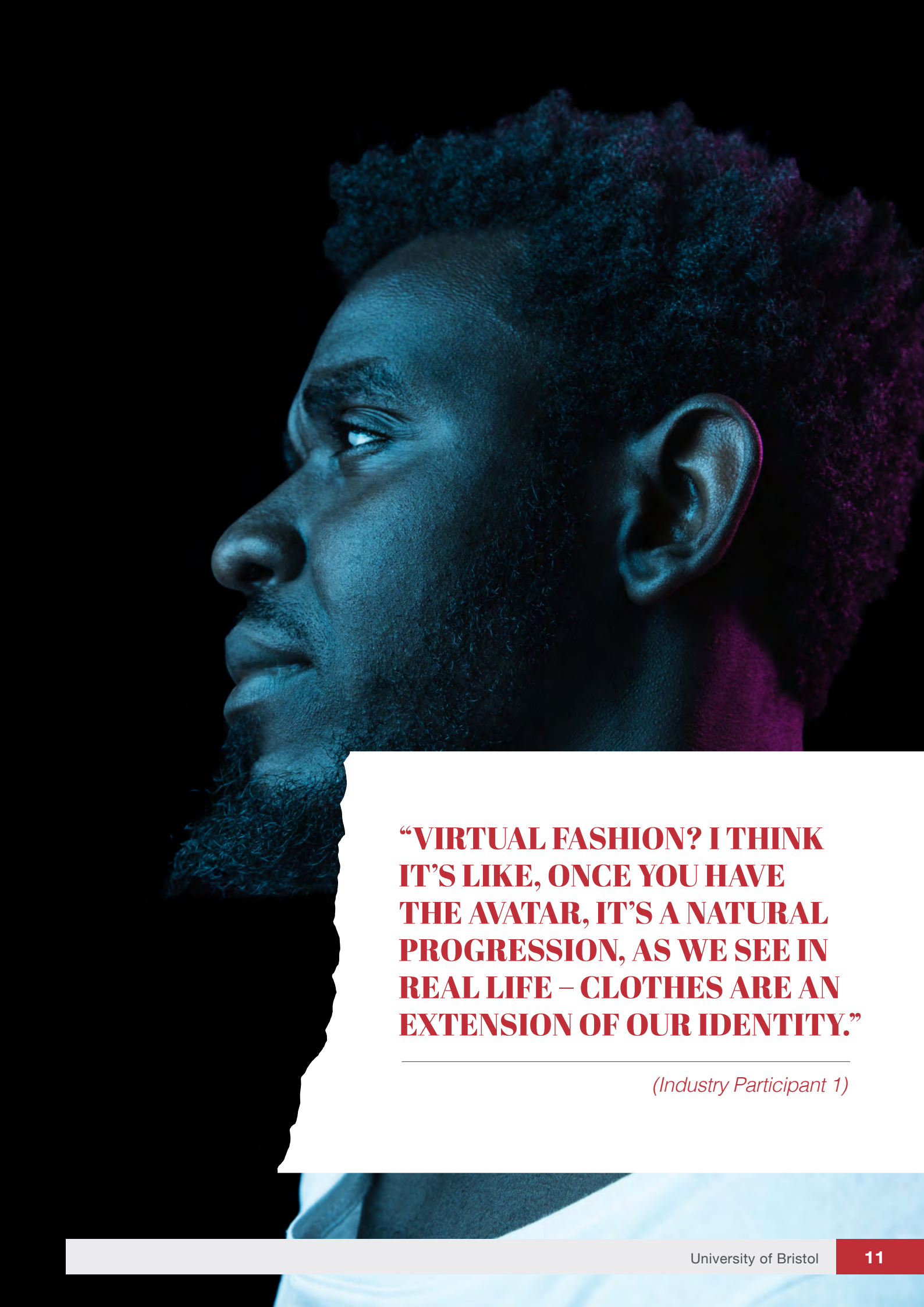
Idealised self-representation is also key, bringing both positive and negative impacts on mental health and well-being. As explained previously, when individuals present idealised versions of themselves online, albeit through curated content or visual filters, they often exaggerate positive qualities and minimise flaws [8], [11], [12]. The pressure to do so is amplified by influencer culture, which encourages social comparison and sets unrealistic standards of beauty, lifestyle, and success [9], [10], a problem further intensified by AI-generated influencers and synthetic content [28]. Indeed, the UK Parliament's Health and Social Care Committee found that 61% of young people feel direct pressure to look a certain way on social media [29]. While aspirational portrayals can boost confidence and empowerment by motivating individuals toward their personal goals [30], they can also contribute to significant emotional, psychological, and social drawbacks. For instance, discrepancies between one's digital self and one's offline self can intensify dissatisfaction with one's real life and appearance [12], [31], which is especially the case for visual filters and their airbrushed effects [12]. Said discrepancies can decrease self-esteem and lead to anxiety, depression, and body dysmorphia [32]. Moreover, in striving to align their appearances with these idealised, unattainable standards, individuals may adopt unhealthy behaviours, including disordered eating patterns, extreme dieting, and the misuse of cosmetic procedures [33]. An increase in this demand has even created a so-called 'cosmetic tourism', where individuals travel to the countries that offer more affordable cosmetic surgeries, sometimes with devastating outcomes [34], [35].

> **"I think well-being and mindfulness are big now for young people so it would seem that might be key. Making people's lives more meaningful may be the next branding."**
>
> *(Industry Participant 2)*

> **"I do compare myself a lot and that is something I need to work on... that child who struggled at school, who wasn't really appreciated, is still there a lot of the time."**
>
> *(Student Participant 4)*

Unexplored mental well-being consequences of self-avatars

Critically, while we know a relatively large amount about the impact of self-representation via social media and visual filters on mental health and well-being, we know less about the impact of self-representation via avatars. As explained previously, avatars are digital entities that represent individuals in virtual environments, resembling them closely, loosely, or not at all [15]. Yet, it can be assumed that their impact is similarly complex [20], [36]. On the one hand, the immersive and interactive experience achieved in these spaces can enhance feelings of connectivity and involvement, leading to positive emotional outcomes such as increased happiness and social satisfaction [37], [38], [39], [40]. On the other hand, when avatars are designed to resemble an individual's real-world appearance, any discrepancies between that and their actual appearance can reflect the stresses found on social media platforms, potentially leading to dissatisfaction. This is exacerbated by individuals' tendency to create idealised versions of themselves, along with the fact that avatar customisation is limited, particularly regarding body shape [17]. Moreover, excessive identification with an avatar can blur the boundaries between the virtual and real world, leading to confusion and difficulty in social interactions outside of gaming or virtual environments [41], [42] and loneliness [43]. There is also concern about the long-term effects of escapism through avatars, such as neglect of real-world responsibilities and relationships [42]. Finally, avatar use can directly impact physical well-being, with studies showing effects on body image discrepancy, posture, and overall physical self-perception [21], [44], [45], [46].



“VIRTUAL FASHION? I THINK IT’S LIKE, ONCE YOU HAVE THE AVATAR, IT’S A NATURAL PROGRESSION, AS WE SEE IN REAL LIFE – CLOTHES ARE AN EXTENSION OF OUR IDENTITY.”

(Industry Participant 1)

"How do we label the customisation features so we don't negatively influence people's customisation choice - that they encourage authenticity and don't come from a place of wanting to fit in/feel better about myself?"

(Academic Participant 2)

"Then how are you left feeling? If actually, [you] can't get [your] body shape? [You] can't get [your] skin texture? [You] can't get very distinctive parts about [your] identity? Then, do people recognise that? And even if they don't, it's subtly reinforcing that idea that [their] body is not acceptable, the norm, or [a] part of things."

(Academic Participant 3)

"We spend so much time trying to undo the harm of social media because of how quickly it progressed without any regulation or thought into these things. So, when I think about avatars, the metaverse, and AI, I want to see more nuanced debates now, because we've learned from that."

(Academic Participant 4)

"How can we ensure people don't end up only living through their digital avatars? How can we design these experiences so they encourage meaningful offline activities too? E.g. dating apps that use avatars for the first match but encourage people to meet up IRL."

(Industry Participant 2)

6 | EXISTING LEGAL FRAMEWORKS AND REGULATIONS

Despite growing concerns regarding the link between online human representation and mental health and well-being, legislative action in this area has been relatively limited.

To date, only a handful of countries have enacted significant laws addressing related concerns, confined to the specific realm of social media influencers. In Europe, both Norway and France require advertisers, including social media influencers, to disclose modified or enhanced visual content – Norway through its amendment to its Marketing Control Act in 2021 [47] and France through its introduction of its Influencer Act in June 2023, which also bans influencers from promoting cosmetic surgery [48]. Some countries in Asia have also taken proactive steps. For instance, South Korea introduced amendments to its Fair Labelling and Advertising Act in 2020, requiring influencers to disclose the use of artificial intelligence, digital technology, or other enhancements—such as altered faces, voices, or appearances—in commercial content [49]. While such transparent disclosure and labelling of enhancing techniques is indeed useful, it is unrealistic to expect that this would fully prevent the negative mental health effects discussed earlier on in this report.

Attempts to establish similar protective legislation in other jurisdictions have largely fallen short. While countries like the UK, Italy, the US, Brazil, India, and China require social media influencers to disclose sponsored content [50], [51], [52], [53], legislation specifically addressing the digital alteration of images remains notably absent. For instance, in the UK, Conservative MP Dr Luke Evans proposed the Digitally Altered Body Bill in 2019, which seeks to mandate clear labelling on all commercial images where models' bodies have been digitally altered [54]. However, the bill remains under consideration at the time of writing of this report. Moreover, at the EU level, the Council of the European Union issued recommendations to enhance influencer legal and social responsibility in 2024, yet these remain as non-binding guidelines rather than enforceable regulations [55].

While broader legislation – including the UK's Online Safety Act [56] and European Union's Digital Services Act [57] – aims to enhance user protection by targeting a wide range of harmful online content and behaviours, such as cyberbullying, harassment, and the spread of illegal material, they do not extend to content modification regarding different forms of online human representation.

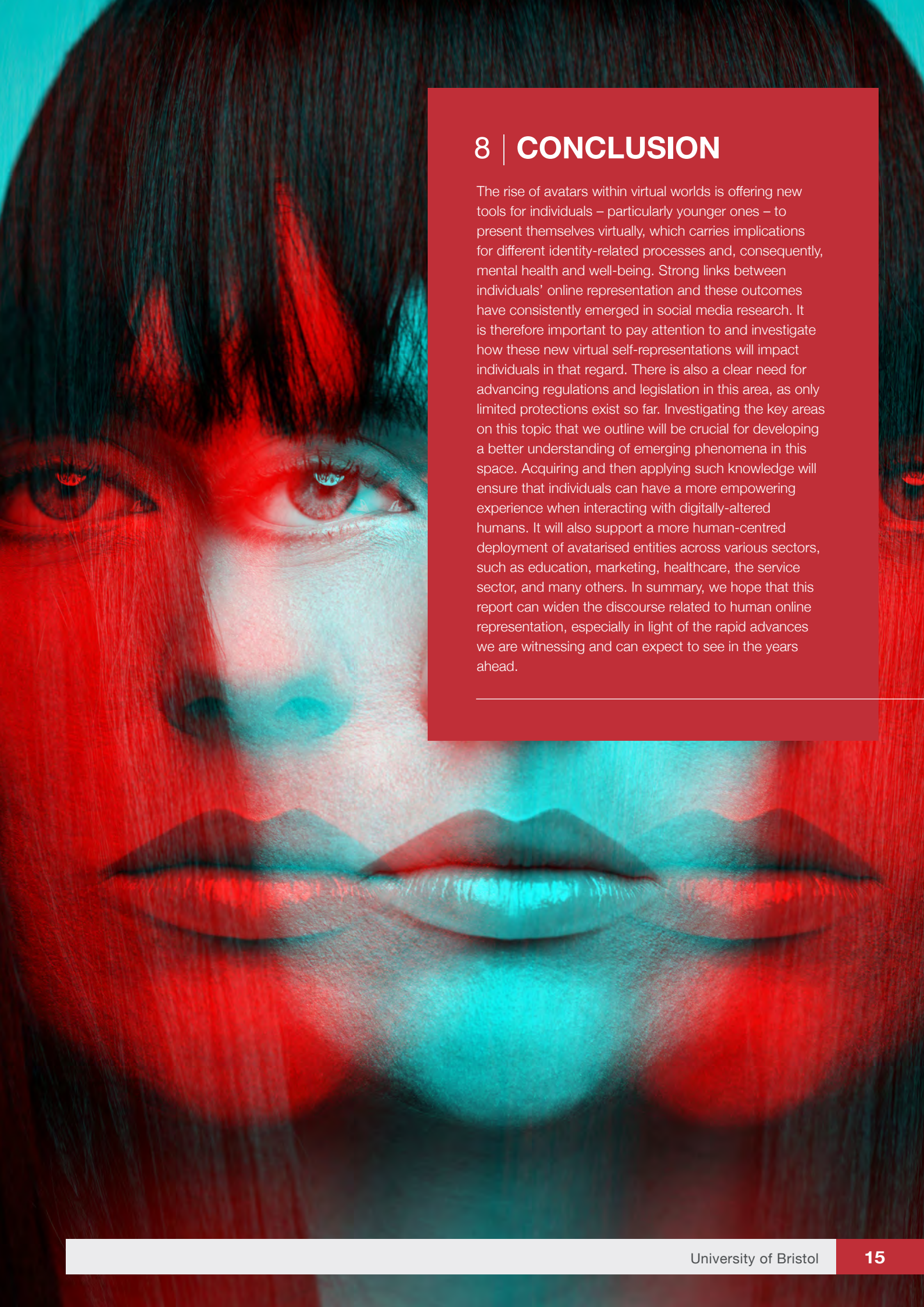
Additionally, the legislative efforts outlined above overlook the rapidly evolving sector of immersive technologies, particularly regarding virtual environments. The nature of these technologies introduces unique challenges by blending physical and psychological experiences [15]. While some pertinent policy discussions have taken place, they have yet to result in concrete action. For instance, the UK's Digital, Culture, Media, and Sport Committee held a parliamentary session on Immersive and Addictive Technologies in 2019, inviting representatives from Snapchat [58]. Although challenges associated with self-esteem and psychological well-being related to the use of beautifying filters were highlighted, no regulatory measures have emerged in light of said concerns. Additionally, the discussion did not address impacts on other key dimensions of well-being, such as sense of meaningfulness [2].

Finally, the action taken by online platforms to address the mental health and well-being implications in relation to online human representations has been limited and largely reactive. Many online platforms prioritise user engagement and advertising revenue, which can be at odds with regulatory efforts to reduce content that promotes unrealistic beauty standards or negatively affects mental health and well-being [59]. For instance, Meta's recent decision to remove third-party filters on Instagram raises questions about their motivations; it remains unclear whether this move was driven by concerns over mental health or by strategic objectives like focusing on proprietary augmented reality and artificial intelligence developments [60], [61]. The same can be said for their newly implemented 'Instagram teen accounts', which aim to provide a safer, more controlled environment for younger users by implementing stricter default privacy settings and enhanced parental controls, yet likely still expose teens to peer pressure and unrealistic beauty standards [62], [63]. Similarly, while platforms like Snapchat and TikTok have engaged in conversations regarding mental health and taken steps to discourage content which might lead to body shaming or dysmorphia [64], [65], they continue to offer numerous filters that modify physical appearances, perpetuating the issues they purport to address. Moreover, all continue to invest in technologies that enhance digital personas, encouraging individuals to create avatars that can significantly diverge from their real-life appearances through augmented reality and other interactive elements [66], [67], [68]. Likewise, collaborative virtual environments like Roblox, which also allow extensive customisation of avatars, operate with minimal oversight regarding potential mental health consequences [69].

7 | KEY AREAS FOR FUTURE INVESTIGATION

New forms of online representation continue to evolve, especially within virtual environments and through the development of AI. Below, we identify areas that require further research to equip us with a better understanding of how individuals and organisations should manage and protect human depictions online.

Areas for further research	Description and research questions
Physical-virtual identity integration	The avatars in virtual realm provides individuals with tools to represent themselves in novel ways, sometimes very different to how one looks offline. *How will individuals integrate their physical and virtual identities, especially when these will appear very different? To what extent will such differences impact an individual sense of self-continuity and how vital is that for personal well-being?*
Multiple virtual identities management	Individuals will be managing numerous virtual identities across platforms that are significantly different, which can prove effortful. For instance, using an avatar in a popular metaverse-like space is different from having a profile on a traditional social media account. *How will individuals combine these different identities in building their virtual presence? Will virtual identity(ies) remain fragmented due to the platforms' differences? Will such fragmentation affect one's sense of self?*
Avatar visualisation styles and their effects on human appearance standards	Avatars' appearances are characterised by different aesthetics trends, such as excessive 'beautification' (emphasised face and body features that are typically perceived as beautiful), 'cartoonisation' (cartoon-like visualisation), 'infantilisation' (depiction of child-like facial features). Many of these appearance trends are not aligned with how humans typically look. Frequently observing such visualisations can impact individual perception of human appearance standards. *Will individuals change their perception of what 'natural' human appearance should look like? Will individuals seek to adopt the virtual appearance trends also in their offline existence? Will this further intensify the focus on appearance and therefore the efforts that individuals are placing on achieving the desired looks, as well as issues such as body dysmorphia already associated with social media?*
Prominence of fantasy characters in virtual environments	Virtual environments can offer a level of entertainment, enchanting aesthetics, enjoyment, and experiences that the real world often cannot match. Many individuals might frequently escape into exciting fantasy-like characters in these unreal worlds. *However, how will embodying a fantasy-like avatar affect one's perception of physical reality? To what extent will that lead to a disillusionment with one's presence in physical reality and the mundanity of everyday life, potentially decreasing general life satisfaction?*
Role of audiences in virtual environments	Many mental health issues associated with social media use have stemmed from individuals' need for social approval or the harms caused by the online audience. Virtual environments, however, are different in that the online audience is often anonymous and there are not so many explicit features that demonstrate observers' approval or rejection, although other risks and forms of abuse can have been observed. *How will virtual audiences influence individuals' choices of avatars and self-representation in virtual environments? How will individuals forge meaningful connections with others in virtual spaces, especially when they are representing themselves as different to who they are in real life?*



8 | CONCLUSION

The rise of avatars within virtual worlds is offering new tools for individuals – particularly younger ones – to present themselves virtually, which carries implications for different identity-related processes and, consequently, mental health and well-being. Strong links between individuals' online representation and these outcomes have consistently emerged in social media research. It is therefore important to pay attention to and investigate how these new virtual self-representations will impact individuals in that regard. There is also a clear need for advancing regulations and legislation in this area, as only limited protections exist so far. Investigating the key areas on this topic that we outline will be crucial for developing a better understanding of emerging phenomena in this space. Acquiring and then applying such knowledge will ensure that individuals can have a more empowering experience when interacting with digitally-altered humans. It will also support a more human-centred deployment of avatarised entities across various sectors, such as education, marketing, healthcare, the service sector, and many others. In summary, we hope that this report can widen the discourse related to human online representation, especially in light of the rapid advances we are witnessing and can expect to see in the years ahead.

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