Dignitas in the Metaverse

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Abstract. In response to increasing calls to address "human dignity" in the Metaverse, the Royal College of Art's MA Fashion Programme utilised Epic's "Metahuman Creator" software to create multiple digital identities. Human dignity has its etymological root in the Latin 'dignitas', and is translated as worth. For the purpose of this study, its meaning is derived from the Charter of the United Nations (1945) which defines the fundamental rights of the humacy3n person, their equality, dignity and worth.

Epic's "Metahuman Creator" is a new type of digital human configurator, based on pre-existing scans of real people where only physically plausible adjustments can be made. As it has a vast range of facial features and skin tones the user can design a variety of digital characters. However, its tools representing trans identities and invisible disabilities have limitations. Here we show the experience of two users, one with a hearing disability and the other undergoing gender-affirming therapy.

We found that tools for representing their identity fell short of expressing their inherent human dignity. The foundations of the Metaverse are therefore at risk of replicating inaccessibility and excluding persons with disabilities and gender differences.

We anticipate our paper to be the starting point for wider participatory research that involves all user groups in the design of platforms, tools and systems. We foresee the findings of our paper fulfilling the UN Charter on Human rights in the digital space through the shaping of policies and advancing existing standards (ISO).

Keywords: Metahuman · Human Dignity · Disablement · Disablism · Embodied Human Diversity · Agency · Creativity and Design · Digital Bodies · Gendered Bodies · Inclusion

1 Introduction

1.1 Background and Context

The Metaverse. Since the new millennium, advances in Information and Communication Technologies (ICT) such as real-time game engines, computer graphics processing, rendering (ray tracing) and 5G broadband speeds, has lead to a rise in Massive Multiplayer Online Games (MMPORGs), as well as open-world games that rely on User

Generated Content. More recently, the global pandemic has accelerated digitalisation across all sectors with the promise of an emergent "Metaverse", a term coined by Neal Stephenson in his science fiction novel Snow Crash (1992) to describe a single, shared, persistent, 3D virtual space, inhabited by Avatars converging virtual reality (VR) and the internet.

The Metaverse, as defined by Ball (2021:42), has an infinite number of users "with an individual sense of presence, and continuity of data" such as gender, race, transactions, ownership and communication. Whilst opportunities are associated with the Metaverse, it is at an embryonic stage and how it develops is open to conjecture. As Floridi (2022:09) observes, it is "a lot of science fiction, little technology, and even less understanding of human nature".

Role of Avatars and Digital Embodiment. Avatars will play a pivotal role in the Metaverse, enabling users to transcend geographical boundaries, interact socially and embody, i.e., express meaning, experience, and agency. Digital embodiment, according to Vasalou et al., (2008) allows users to (i) accurately reflect their offline selves by displaying stable self-attributes (ii) construct a playful representation of the self and (iii) send an embodied message. The contrast between the physical body of the user and the digital body of the avatar is described by Schultze (2011) as a form of "technological artefact". The limitations of software tools and interfaces to allow or disallow certain types of bodies to exist has been identified by Harper (2020) as "gaps and biases" that become the cultural norms.

In this paper, we refer to marginalised individuals who are identified as "transgender" or "disabled", i.e. those whose gender identity is incongruent with the sex assigned to them at birth, or who have been described as outside of able-bodied norms. Research by van Aller (2018) showed that gender fluid and trans participants felt limited by the lack of options to create non-normative bodies in games. Morgan et. al., (2020) studied adolescent trans and gender diverse (TGD) youth who reported negative experiences of avatar design. TGD gamers recommended subtle design changes to not just the visual appearance but also to the use of language by providing "customisable pronouns" that would not limit them to male or female in-game interactions. Kosceisza (2023) studied non-cis gender participants who engaged in varying levels of participation with other players via voice chat. One, who was medically transitioning from female to male appreciated the moment their voice (deepened through the use of hormone treatment) aligned with their avatar's appearance and the "heroic and deep, chocolate sounding" masculine tones. In voice interactions with other players, they felt further affirmed as male by the wider gaming community. This was in contrast to other players who identified as non-binary or trans-feminine who made "strategic choices" as to whether they should speak in chats with unknown players due to prior experience of abuse and misgendering, when their voice was perceived as a mismatch with their female avatars.

Research by Zallio & Clarkson (2022), Radanliev et. al. (2023), and Seigneur et al. (2023) investigated accessibility issues for disabled users in the Metaverse. They found that in spite of the proliferation of Metaverse projects, access to the virtual world "remains distant" for those with disabilities. The authors propose the use of multiple emerging technologies (VR, AR and IoT), to better enable physically disabled participants to engage in the design and development of standards for the Metaverse.

The current study stands apart from the above due to its focus on a digital human configurator, and the involvement of participants, one with a hearing impairment and the other at the start of gender-reassignment therapy. Digital human configurators, such as the Metahuman Creator software, are different from traditional gaming character customisation and avatar generation tools. It is a new genre of digital technology that models and textures photorealistic human identities, allowing users to configure a "Metaself" in a plausible but data-constrained way, outside of any pre- existing games and virtual worlds.

Project Talks and Workshops. The Metahuman project began with a series of four workshops to unlock creativity and innovative future-led design thinking. It was led by philosophers, social scientists, evolutionary biologists, academics, artists and curators who presented topics ranging from gene editing to psychological and legal definitions of identity, biometric surveillance and the curatorial practice of queering.

In a workshop on human dignity, the Transhumanist philosopher, Dr Stefan Sorgner argued that the greatest potential revolutionising our way of life can be found at the intersection of digitalisation and precision medicine and gene editing technologies, "so in addition to the outer Internet of Things (IoT), we develop an Internet of Bodies (IoB), that are devices which alter the body's functions." The IoB ecosystem, however, is a largely unregulated market that poses cyber and privacy risks to the uniquely sensitive personal data that devices gather on humans. Professor Jannice Käll, a specialist in Posthuman law and digitalisation, discussed the risks associated with the blurring of boundaries between physical and digital bodies, which might lead to our multiple identities being owned by or "streamlined towards the ends of capitalist or racist corporations."

The workshops challenged participants to question:

1. How do we become Metahumans?
2. What do we want to take with us into the Metaverse, and what do we want to leave behind?
3. What might the effect on our physical identity be of creating a new digital identity for the Metaverse, and to what extent might our personal and social identities of ability, gender, race, sexuality, age and class be redefined in the Metaverse?

2 Methodology

We conducted a series of focus groups and interviews with 17 participants across 2 months. Participants voluntarily enrolled on the project from across the School of Design at the Royal College of Art, ranging in subject specialism from Industrial Design Engineering to Intelligent Mobility, Design Products, Textiles and Fashion. Participants had an average age range of 23, with 7 participants identifying as male, 9 as female and 1 as trans. When it came to race, 3 participants identified as White, 12 participants were Asian, 1 was Hispanic and 1 was of British-African origin. All participants were asked to sign a consent form prior to engaging in the study.

During these individual and small group sessions, participants described their design process and use of facial recognition animation from Livelink and audio-driven facial animation from Speech Graphics that drove not just the mouth but the entire face of their avatars. The term "avatar" is taken from Sanskrit to mean the human embodiment

of a deity that interacts with humans and experiences Earth from a human perspective (Nowak, 2015). For this study, the term 'avatar', 'Metahuman', 'digital bodies' are taken to mean "the user in a fully immersive digital environment" where it can "facilitate complex actions including nonverbal communication via gestures, body posture, proxemics and even haptics" (Nowak and Fox 2018: 33).

The work of two participants will be shared in case study format and narrated in first-person, singular. These case studies focus on human dignity, trans identities and disability in the virtual world. The participants' experience of the Metahuman Creator software and other relevant digital technologies are cited in Table 1.

Table 1. Participants' experience of the Metahuman Creator software and other relevant Digital Technologies

	Metahuman Creator	Mesh to Metahuman	Agisoft Metashape (standard edition)	Artec Eva Colour Scanner	Unreal Engine	Blender	Speech Graphics	Live Link Face
Sam	!	!	!	!	!	!	!	!
Seb	!				!		!	
Pros	-Free -Minimal 3D experience required -Browser based -High fidelity -Ready for animation -Interoperable with Unreal Engine + Live Link	-Free -Users has full control over uploaded 3D scan -Possible to create a Methuman with much closer likeness to user	-Industry quality photogrammetry software -User has full control over input - possible to photograph and upload a diverse range of bodies/faces	-High quality capture resolution -Handheld and easy to move around a body -User has full control over input - possible to photograph and upload a diverse range of bodies/faces -Faster and more accurate than photogrammetry in capturing form	-Free -Huge library of free 3D models	-Open Source -Freedom to create any 3D object	-Automated facial animation based on voice recording	-Realtime facial/head animation -Makes facial tracking more accessible to beginners
Cons	-Constrained within preset "physically plausible" sliders -Minimal choice of body types, hair types, makeup, clothing	-User must generate their own 3D face mesh -"Real" textures from 3D scan not preserved -Mesh can be "blended" with preexisting Metahuman scans to remove errors/artefacts -No ability to use a body scan so face is applied to a limited choice of presets	-Cost -High level of skill required for accurate results -Lighting conditions to capture photos can be difficult to get right -When capturing a person, they must remain as still as possible until all photos are taken -Mesh generated must be taken into another software to prepare for animating	-Cost -High level of skill required for accurate results -Mesh generated must be taken into another software to prepare for animating	-High level of skill required -Minimum System Requirements -Poor interoperability outside Epic softwares -Unable to build avatars within Unreal must be exported from elsewhere	-High level of skill required -Minimum System Requirements	-Cost -Creates generic facial animations -Lacks personality	-Requires Iphone 12 (or above) -Unable to detect very subtle facial movements -Requires knowledge of Unreal Engine to process and render data

	Metahuman Creator	Mesh to Metahuman	Agisoft Metashape (standard edition)	Artec Eva Colour Scanner	Unreal Engine	Blender	Speech Graphics	Live Link Face
	-unlabelled but clearly gender marked							
	binary options of male and female							
	(facial features + body types)							
	-Unable to create a body with any							
	form of disability							

3 Results

3.1 Portraying Gender Non-conformity in the Metahuman

Case Study #1: Sam. I am a digital artist and craftsperson whose work orbits ideas of trans identities and storytelling, moving between the real and unreal, the physical and digital. I began my medical transition a year ago at the age of 29. This came after years of questioning my gender identity and struggling with dysphoria about how others perceived me. My earliest memory of feeling disconnected from the gender I was assigned (male) was at the age of 7. I first understood about gender fluidity when I moved to London at 19 and began identifying as non-binary but with an emphasis, I felt more feminine than masculine. In the 10 years since I have felt my identity evolve as I have come to better understand myself and feel most comfortable navigating the world.

I began to experiment with representing myself in the digital space whilst I was a student on my undergraduate Fashion degree at Central Saint Martins (CSM). I experimented with 3D photogrammetry and photographed myself in 6 different garments (Fig. 4). These existed as static models capturing a moment in time and lacking any movement. When I embarked on my Masters study at the RCA in 2019, I was able to get a complete body scan using an Artec Eva colour scanner. It provided me with a higher resolution 3D model (Fig. 5) than I had achieved previously. As I became more experienced with 3D modelling and animation techniques I was able to customise my scan to represent my idealised body. After graduation, I continued at the RCA as an Associate Lecturer and honed my practice. I joined the Metahuman Project as a technical adviser. Working with Metahuman Creator I was able to create a digital human with a much higher fidelity, elevating my work to industry standard. With the initial Metahuman I used tools such as Live Link Face and Speech Graphics to animate my avatar, a task that would usually take several highly skilled individuals familiar with various 3D techniques to accomplish.

Aim. The aim of my Metahuman was to try and recreate my trans identity in a virtual avatar. I have always been drawn to virtual spaces as a way to exist in a non-gendered body, a body made of 0's and 1's, free from the constraints of the physical world.
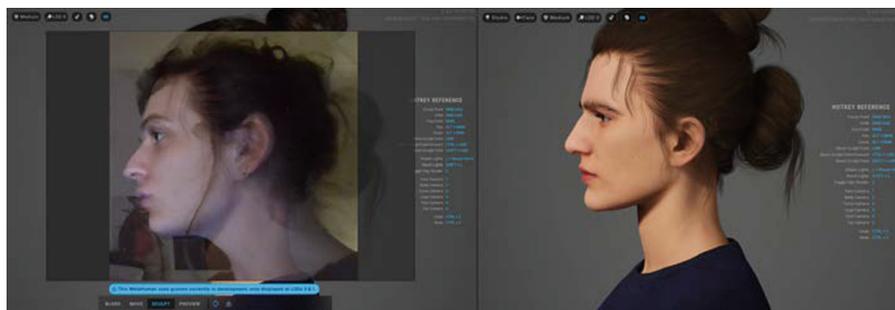
Fig. 1. Screenshots of the Metahuman Creator with PureRef open (left). (source: Author's own)

Creative Process. My initial experience of the Metahuman Creator was of an awkward software that was slow to respond. The only way to create something remotely like me was to either sit in front of a mirror going back and forth from screen to reflection, comparing my physical features to the digital face, adjusting sliders set to individual points on the face. Wider nose, higher cheekbones, square jaw, or to use a referencing program such as PureRef which allowed me to overlay a window with photographs of my face, set at high transparency so I could adjust the Metahumans sliders accordingly (Fig. 1).

Both methods produced inaccuracies. For example, I was unable to recreate the exact bump of the bridge of my nose. I felt a subconscious desire to "fix" or idealise my real features in the virtual copy. As the starting point was built on pre-existing faces it never truly felt like my own. As I began utilising Live Link Face (launched by Unreal in July 2020) I was able to animate my Methuman in real-time with facial animation captured through my iPhone (Fig. 2). Through this interaction I felt I was able to build somewhat of a closer connection with my avatar, it didn't look completely like me but now I could control how it moved and spoke.

When it came to adding a voice I felt anxious. As a trans woman the pitch, tone and resonance of my voice can be a source of being misgendered by others. As my avatar was reading a mixture of words written by myself and poems co-written with a writing style A.I., I chose to add subtle reverb and distortion to better suggest a synthesis between myself and my digital copy. For the final render, I used Speech Graphics which automated the animation process, generating facial expressions, eye movements and synched lips to the prerecorded audio. This added a further layer of the uncanny and a "fakeness" to the Metahuman as there was no contraction or relaxing of my facial muscles and bone structure.

When Epic Games first launched the Metahuman Creator software in February 2021, it used a sculpting tool allowing facial features to be manipulated in real-time

Fig. 2. Screenshot of Zoom session running Live Link Face to animate Metahuman (source: Author's own)

within "physically plausible" limits. The tool allowed users to "blend" between multiple Metahumans, adjusting sliders, emphasising or reducing elements from the blended presets. According to Unreal Engine (2023), the catalogue of faces introduced at the time was "based on pre-existing scans of real people" allowing for "easy" production of realistic digital humans.
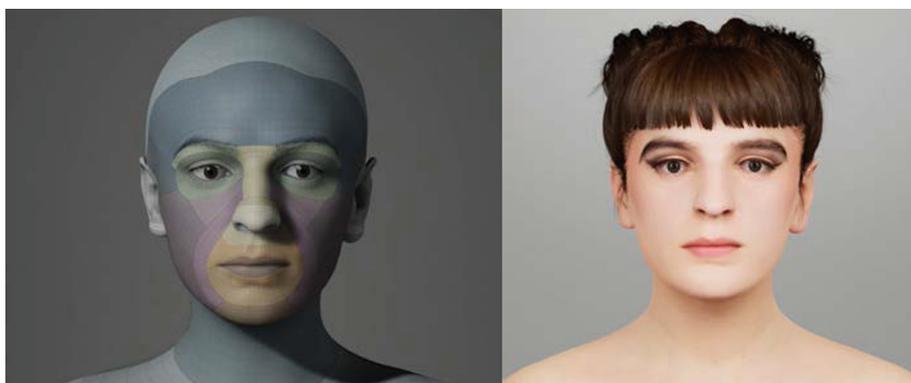
Fig. 3. (left) Screenshot of "Mesh to Metahuman" Scan, (right) Screenshot of "MetaSam" with textures & hair assets (source: Author's own)

More recently, Epic has released a plugin called Mesh to Metahuman, giving people the ability to upload a 3D scan of a face that is rigged as a Metahuman. This is a step forward and one that I used to create my "MetaSelf" (Fig. 3). However it comes with limitations, to fix any issues with the original scan you are given the option of

smoothing out any abnormalities in the mesh aligning your original scan more closely to the "perfection" of the ones created in the studio. Secondly, it doesn't retain the textures of the original scan, instead, you have to create a close facsimile from the skin textures provided (Fig. 3).
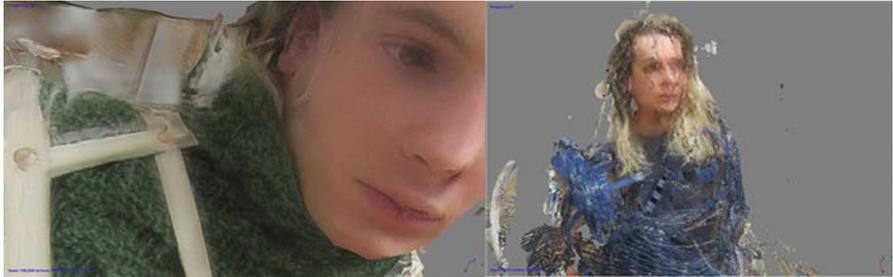
Fig. 4. Screenshots of 3D models of myself - Agisoft Metashape (source: Author's own)

Further Experimentation: Prior to my designs in the Metahuman Creator I achieved raw energy and intensity with other software.

I attempted to represent my gender identity by taking a series of 360° photographs at various heights and stitching them together in Agisoft Metashape software, to create a 3D model (Fig. 4). It was the first time I had seen myself in 3D space, the process of photogrammetry involves taking multiple overlapping images of a subject, the distance of the camera from each picture is then estimated. This produces a point cloud of data which can be turned into a polygonal mesh, a highly skilled task requiring an expensive camera rig and lighting setup. The process of capturing my image was amateur and led to multiple glitches, seams and ruptures in the model. My face was captured from multiple angles, and my hair and other fine details were matted and fused, these abstract collages of various angles of my face and body to me better reflected my gender identity, an identity that was in a state of flux. This felt closer aligned to my sense of crossing gender binaries, inhabiting a moment in-between spaces, the actual process of having a friend take all the photos required me to stand as still as possible for 5 to 10 min.

As an undergraduate at the RCA, I was able to attend professional workshops, where I took a full body scan using an Artec Eva colour scanner (Fig. 5). This was essentially the same process I had used before but at a much higher fidelity. The 3D model, with fewer glitches, was a copy of my physical likeness. At the time I was still identified as non-binary, which led to the 3D model being customised to remove any obvious sexual characteristics (Fig. 6 and Fig. 7).

3.2 Portraying Hearing Impairment in the Metahuman

Case Study #2: Seb. I trained as a fashion designer and currently conduct research into inclusive and accessible design and technology. I lost my hearing at the age of 18 due to a rare neurological condition and learned to communicate through lipreading, to the

Fig. 5. Screenshots of my head captured with an Artec Eva Scanner (source: Author's own)

Fig.6. Screenshots of development of my genderless avatar - Unreal Engine (left)/Blender (right) (source: Author's own)

**Fig.7.** Screenshot of my final film "At_the_Sea's_Edge" - Unreal Engine post (source: Author's own)

point where hearing people rarely notice my disability. Whilst I may be perceived as able-bodied, my experience continues to be that of someone who is profoundly deaf.

I cannot hear my surroundings, and cannot respond to or process the auditory world around me.

During my postgraduate study at the RCA I developed different experiences which translated sound into visual and tactile stimuli. I began by experimenting with three-dimensional digital sculptures created from sound, based on an algorithm utilising pitch, volume, timbre, and other aspects of noise. While these digital sculptures do not allow the viewer to understand the sound in a rational sense, they were the first steps to translating an emotional layer of sound. It was never about the ability to understand sound from a logical perspective, rather from an emotional dimension. The aim was to develop garments which translated sound into tactile stimuli, enabling people who are deaf to experience sound without hearing it.

Aim. The aim of my Metahuman was to explore how my identity as a person who is unable to decipher sound (an invisible disability) might be represented.

Creative Process. I was intentional in my design of my avatar and set out to create a digital facsimile of myself somewhat like a digital mirror, which looked like me, moved and spoke like me. This was my first experience of digital identity creation, having previously experimented with I spent a total of 17 h designing my Metahuman to be my digital twin (Fig. 8) but already failed with the first intention, to create a Metahuman which looks like me.
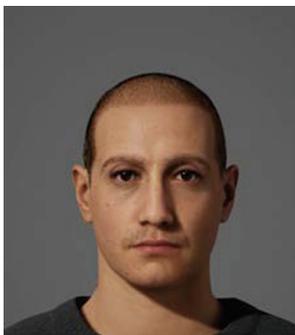
Fig. 8. Representation of myself in the Metahuman (source: Author's own)

While the software offered a wide range of facial features and skin complexions, choice of hair and eye colour and whilst I got close to it at points, it never looked right or felt right. The first reason for this is that the sculpting tools in the creator were quite slow and clunky to respond, and while it offers a lot of possible changes, it is also quite restrictive in what the Avatar can look like.

It took me some time to figure out the second reason: while the Metahuman Creator's realistic digital human characters are based on 80 pre-existing scans of real people, it aestheticises everything that is created. There was no way of creating bodies that stray from the hegemonic norms. This was quite demotivating and I abandoned my original plan to create my digital twin. I changed my objective to explore if different

Fig. 9. A Collective of 5 Perfect Imperfections (source: Author's own)

disabled identities could be created in the Metahuman Creator. I customised the physical characteristics of different preset avatars, facial features, hair, hair colour, and eyes to represent the features of people with visible disabilities. As there was no way for the Metahuman Creator to design an avatar with missing limbs or other body impairments, I focused on facial features. But while trying to break away from the able- bodied avatars, changing features like forehead width, eye distance, angle, and size, (Fig. 9) the limits of what changes can be made, made it impossible to represent the features of people with disabilities. Even worse, I found myself facing the possibility of perpetuating harmful stereotypes around disability, race and gender. I needed more fine-grained customisation to remove the disabling barriers of the software.

For the final outcome of my Metahuman project, I decided to go in a different direction. I arranged my five Metahumans, which show signs of inherent aestheticization into a "collective" of perfect imperfection. This collective recites a message (Fig. 10) to the viewer about the viewers' unworthiness to be in the Metaverse.

We are human
Perfect
Complete
You don't belong here
You are damaged
Wrong
Unworthy
People like you
Don't exist in the metaverse
There is no place
For Imperfection
No diversity
No inclusivity
We don't need it
You don't exist

Fig. 10. The descriptive text the Collective of 5 Perfect Imperfections recite (source: Author's own)

In order to represent my experience of not hearing the world, the Metahumans move their lips but no sound is audible. The able-bodied viewer can only understand through the subtitles at the bottom of the video.

4 Findings and Analysis

Diverse user groups. The findings show a need to include visible and invisible disabilities, trans and gender non-conforming individuals within the scanned catalogue of digital humans supplied by Epic. This would open up the possibility of blending faces and features outside default options. Greater customisation would enable (i) trans users to create a feminine body with broader shoulders, narrower hips, and smaller breasts (ii) visibly disabled users to create disability-related avatar features and (iii) invisibly disabled users to choose gestures (signing) as part of the Metahumans' preset tools (Figs. 11 and 12).
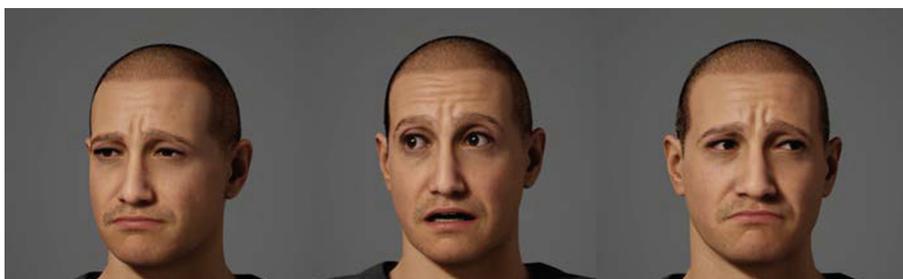
Fig. 11. Examples of Metahuman expression presets (source: Author's own)
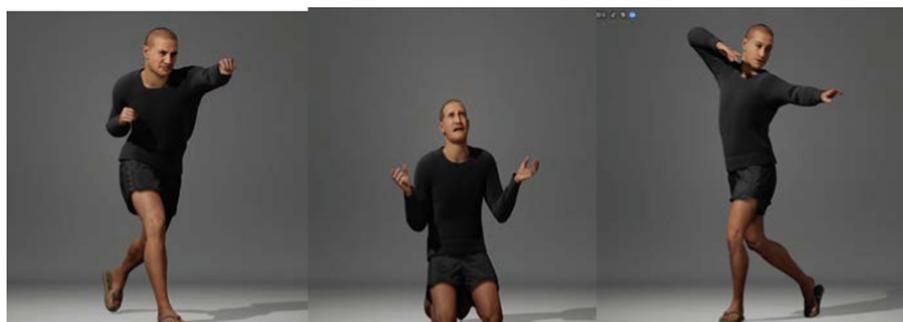
Fig. 12. Examples of Metahuman movement presets (source: Author's own)

Customisable Options. An expanded library of customisable makeup colours and styles is needed. Makeup and other cosmetics are not merely mundane rituals but, as Erickson-Schroth (2014: 74) argues, "profound acts of self-care, affirmation and resilience", vital for building confidence in the trans community. Support for original,

as opposed to pre-existing, textures in the Mesh to Metahuman feature would allow a person's unique skin type, texture, and distinguishing markings to be applied directly to the Metahuman.

These findings are congruent with the experience of gaming communities interviewed by Kosceisza (2023), van Aller (2018) and Morgan (2020). Kosceisza (2023:10) argued that trans-feminine players made "strategic choices", by "pitching [their] voice" higher, to avoid harassment from other players. The same anxiety is evident in Sam's response, where she is concerned that her disembodied voice will be "witnessed" as masculine due to her natural intonation, resonance, articulation and vocal quality. The sociologist, Aaron Devor (2004), in his model of "Transsexual Identity Formation", describes humans as social beings with a deep need to be 'witnessed' by others for who we are. Hence, when transgender individuals are validated by dispassionate, i.e., impartial, others in ways that accurately conforms to their own sense of self, their identities are powerfully reinforced. Conversely, a gender dichotomised virtual world has the effect of inflicting psychological distress.

Whilst face and body controls are not gendered within the Metahuman Creator, the platform's online literature lists body proportions as either "feminine" or "masculine body types" with measurements "representative" of men and women (Fig. 13).

Height	Feminine Type	Masculine Type
The following heights are representative of the feminine and masculine body types:		
Short	4'11" (1.49m)	5'5" (1.65m)
Average	5'3" (1.60m)	5'8" (1.72m)
Tall	5'6" (1.675m)	5'11" (1.80m)

Fig. 13. Body proportions: representative of male and female body types (source:metahuman-creator-body-controls 2023)

The tallest Feminine Type is measured at $5'6''$, which means that Sam's height of $5'11''$ lists under Tall Masculine, a muscular athletic physique unlike her own. As van Aller argues (2018: 15) when deciding "options for bodies, facial features, hairstyles, clothing, voice pitch, and pronouns" (2018: 15), it is necessary to include trans and gender non-conforming users.

The inability to create avatars with invisible markers of disability are currently based on what is physically plausible for able-bodied people. As Harper argues (2020: 276) it may be that we need a digital human configurator where the disabled body is the modular core, as we are prone to "valorise able-bodied norms of inclusion" as the qualification for citizenship (Mitchell & Snyder 2015: 12). We must design for a future Metaverse that is not merely a mirror of the physical present, but halts the cycle of "mutant bodies" being marginalised on the edges of power and refused their fundamental human right to exist.

5 Conclusion

5.1 Moving Beyond the Present Impasse

At the beginning of this perspective paper, we set out to answer the following research question:

To what extent does the Metahuman embody "human dignity" in the representation of self in the virtual world?

We recognise that whilst the United Nations' Charter (1945) defines Human Dignity as "the worth of the human person", in the participant studies cited, marginalised identities are not afforded this human right.

The limitations we have identified in the Metahuman Creator are symptomatic of the challenges to be addressed in the emergent Metaverse. As Anne Balsamo (1996:131) predicted, we have seen "old identities … continue to be more comfortable, and thus more frequently reproduced" in virtual spaces. We argue that tools for designing identity online must strive for a Pluriverse "in which diverse hopes can be sown, multiple opportunities cultivated, and a plurality of meaningful lives achieved" (Gaard 2017). Pluriversality as defined by Mignolo (2018) views the world as an "interconnected diversity" rather than a unified totality, so that in order for it to make sense it rejects Christian, Liberal, Marxist models of universal ownership in favour of indigenous and decolonised models such as the Zapatistas who create "Queremos un mundo donde quepan muchos mundos", a world where many worlds fit (Rogers, 2021).

In Designs for the Pluriverse, Escobar (2017) describes "design autonomy" as a set of "tools, interactions, contexts, and languages" that empower all forms of ontological world building. This expansion of meaning-making through pluriversality offers an opportunity to develop and extend our definitions of human dignity in relation to the existing definition of the Metaverse.

In the next phase of our research, we intend to work with both disabled and trans communities to gather data that is representative of the multiplicity of experiences within these groups. We will reach out to organisations such as WITCih (The Women in Technologies Creative Industries Hub) Digi-GXL (global group of womxn, intersex, trans, non-binary people specialising in digital design) and the Helen Hamlyn Centre for Design at the Royal College of Art to gather respondents who are actively engaging in digital technologies. We hope to collaborate with digital human configurators such as Epic in designing new tools, practices and processes that will enable an authentic representation of disabled and gender fluid bodies.

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