



Identification and IDNs in the Metaverse: Who Would We Like to Be?

Jonathan Barbara^{1,2}  and Mads Haahr¹ 

¹ School of Computer Science and Statistics, Trinity College Dublin, Dublin, Ireland
{barbaraj, haahrm}@tcd.ie

² Saint Martin's Institute of Higher Education, Hamrun, Malta

Abstract. One's digital identity on the Metaverse is critical enough to warrant EU regulation. Suggesting Interactive Digital Narratives as having a role to play in the Metaverse, we focus on the identity of the Virtual Reality interactor in such virtual spaces, and the potential impact this may have on the self-identity of the interactor. Building upon the notions of identity and the interactor's construction of their narrative identity, we revisit identification in the context of VR Interactive Narratives (VRINs) and explore authenticity and character similarity as its dimensions. We interpret the construction of a narrative identity in VR as a vehicle for identity shift between the interactor's self-identity and identification with the character. Based on the theoretical framework, we present a conceptual model for identity shift in VRINs which we then apply to a number of case studies to exemplify its utility and provide some guidelines for VRIN authors in how to use this model.

Keyword: Virtual reality · Interactive narrative · Identity · Authenticity

1 Introduction

The next generation of social media platforms are touted to be less of an asynchronous consumption of text and video posts as known from current platforms, like Facebook, YouTube, Twitter and TikTok, and more of an immersive experience in Virtual Reality (VR) of which Microsoft's AltSpaceVR and Meta's HorizonWorlds are typical exemplars. Coined by Neal Stephenson in his dystopian science-fiction novel *Snow Crash* [1], the term 'Metaverse' was subsequently adopted by the tech industry as an amalgam of Web 2.0 and video games in a roadmap presented by a cross-industry public foresight project looking into pathways to the 3D Web [2], then labeled as 'Web 3.0'. In their historical analysis of social media, Sajithra and Patil [3] presented Web 3.0 as an extension of Web 2.0's participatory technologies and social networks into 3D space. In this 3D space, identity is crucial for trust and reputation, as the EU's regulation on a digital identity¹ shows, while "identity experimentation, self-revelation, and roleplay [may be supported] [in] theme-based game worlds and less popular social [virtual worlds]" [2].

¹ https://ec.europa.eu/info/strategy/priorities-2019-2024/europe-fit-digital-age/european-digital-identity_en.

Since its initial proposal, the focus of Web 3.0 seems to have shifted towards blockchain, cryptocurrencies, big data and artificial intelligence to build the ‘semantic web’ [4], but Meta’s push towards the Metaverse as a social VR platform surely puts the technology as one of the main drivers of Web 4.0 [5].

For the ICIDS community in 2022, in its perspective on Speculative Horizons, the Metaverse may not be a total transition from asynchronous social media posts and websites to a 3D virtual world where visitors synchronously interact through their digital avatars. As an interim stage, IDNs may become a platform through which a poster’s wall is presented as an asynchronous interactive experience for their VR visitors: a more personalized social media experience that allows the visitor to focus on information that they find more relevant to themselves, as represented by their online social identity. Just as Web 1.0 was dominated by commercial websites in comparison with Web 2.0 which empowered the general public to have their own online presence, likewise we expect the first wave of the Metaverse to be commercially driven, with already blossoming development of platforms that allow the general public to have their own 3D space. While we leave this speculative role of IDNs in the Metaverse for discussion elsewhere, we bring our attention to the identity of the VR interactor in such virtual spaces and also the potential impact this may have on the self-identity of the interactor. The recent reports of sexual violence and harassment on Metaverse platforms [6] draws attention to the interactor-avatar bond in relation to which scholarly research so far has focused more on presence and embodiment [7–10] and less on the transformational effects on the victim as interactor. The latter focused more on VR’s supposed empathy-inducing abilities [11–13], a troublesome concept for IDN scholars [13–16] as VR by itself is not empathy-inducing without proper narrative techniques [17]. Instead, we shift our perspective onto an understanding of the relationship between the VR interactor’s self-identity and their virtual identity by presenting a conceptual model that positions the narrative identity, constructed through the VR Interactive Narrative (VRIN) by the interactor, between their self identity and the author’s intended character’s identity. The conceptual model presents this relationship as a continuum between self-identity and character identification along the dimensions of authenticity and similarity and presents a few case studies that are discussed and projected onto this continuum to explain its use.

2 Background

2.1 Identity and Narrative Identity

Ricoeur [18] presents identity as the self-reflective ipse-identity (a selfhood that can change) and the external self, judged in terms of quality and structure, the idem-identity (sameness). Seeing narrative as “a crucial component for the creation of personal identities” [19] narrative-identity is presented as a bridge between the ipse- and idem- identities [20], representing both change and permanence [21].

Gee [22] presented three identities based around his relationship with his half-elf avatar in the game *Arcanum* (2001) as James Paul Gee as Bead Bead. James Paul Gee as himself is presented as the real identity, Bead Bead as his half-elf character is the virtual identity, and the prepositional “as” between these two identities as the projective

identity in which Gee projects himself onto Bead Bead the half-elf - matching the above definition of identification.

From the personal narratives perspective, Wilt et al. [23] extend the narrative identity's function as a bridge by defining it as "the evolving life stories that connect one's past with the present day and imagined future" (pg. 8). Hallford and Mellor [24] claim that "the meaningful integration of positive and negative, congruent and contradictory experiences" (pg. 1) is a function of this narrative identity, drawing parallels with the Jungian "self" as "the sum of everything we are now, and everything we once were, as well as everything we could potentially become... that which we are as a totality" [25].

These competing identities were also addressed by Carl Jung through his notion of archetypes. Firstly, Jung claimed that identity was mainly the responsibility of our ego, the conscious mind comprising the thoughts, memories, and emotions of which a person is aware. However, Jung claimed that the ego is a "highly complex affair" that can be defined as "a relatively constant personification of the unconscious itself" [26]. Jung augmented the Freudian concept of the (personal) unconscious - repressed, unacknowledged mental material - with the notion of the collective unconscious that is common across the human species and in which he identified several archetypes, amongst them the persona, the anima/animus, and the self [26]. The persona archetype represents roles that we fulfill and the behavior expected out of them. Jung defines it as "the individual's system of adaptation to, or the manner he assumes in dealing with, the world" and it may happen that one becomes the persona, "that in reality one is not, [but] which oneself as well as others think one is" [27].

This compliance with expected behavior may explain questions about the notion of a single inner true self [28, 29]. Renowned psychologist Jerome Bruner proposes that "there is no such thing as an intuitively obvious and essential self to know" but "we constantly construct and reconstruct ourselves to meet the needs of the situations we encounter" [29]. By looking at how individuals use computers to work around their identity issues and develop intimacy with others, Turkle [28] sees computers as virtual realities in themselves, enabling the self to reflect on its own nature as well as explore its social context. As players seek to build different versions of themselves, already in the text-based versions popular in the 1990s, but more so in the visual realism offered today, a multitude of the self, rather than the single identity, results. Schlenker [30] had provided a suggestion that these alternate personae are in response to the environment and the audience within, while Bruner [29] later commented on how one's self-narratives attempt to find balance between autonomy and commitment to others.

2.2 Identification

These differences between the self and the personae cause identification to happen; otherwise, we have identity [31]. Thus, identification "is an imaginative experience in which a person surrenders consciousness of his or her own identity and experiences the world through someone else's point of view [vicarious experience]." [32]. It is "mediated by a psychological process in which the reader takes on the characteristics of the fictional character" [33]. "Identification leads to the (temporary) adoption of an external point of view and to viewing the world through an alternative social reality. The varying intensity

of identification reflects the extent to which one exchanges his or her own perspective for that of another and is able to forget him- or herself” [32].

Identification has a greater chance of happening when certain antecedent conditions are met, including cognitive and social-science oriented elements. Cognitive elements, as suggested by Oatley [33], include enactment (adopting the goals of the protagonist), virtual worlds (presenting an imaginary world), addressing the player via parasocial interaction (PSI) (speech acts for the reader) and narrative consistency (the potential for constructive integration of disparate elements) (also cf [34]). Elsewhere, Busselle and Bilandzic [35] find strong correlation between Narrative Engagement and Identification. Drawing from social-science oriented research, Cohen [32] claims that narrative genres (such as drama and comedy) should elicit identification with a target character more than non-narrative genres (such as talk shows and news) as the latter address the audience and are more conducive to PSI. Cohen [32] also claims that in identification there is no PSI (with the target character) because as the interactor becomes the character, there is no interaction between them (as it requires them to be separate). However, we argue that, in the case of interactive narratives, PSI on the target character’s behalf with other characters would enhance identification, as supported by Oatley [33] above.

Another antecedent condition is the target character’s similarity to the reader in terms of appearance, culture, attributes, or situation and, subsequently, the character’s perceived realism in relation to reality or stereotypical views [7, 32]. Klimmt et al. [36], amongst others, have considered the notion of identification in games. They define identification as “a temporary shift in players’ self-perception” (p. 235) as the players fulfill the role of the character assigned to them in the game. They suggest that video game enjoyment is dependent on the assigned character’s greater similarity to themselves (cf “mirror hypothesis”²) or to the player’s ideal preferred self in relation to their own self-perception (cf “magic mirror hypothesis”). This latter similarity presents a “wishful identification” [7] as the player seeks to reduce their self-discrepancy (cf “self-discrepancy theory” [37]) by identifying with the character [8].

A counter-example is provided by *Grand Theft Auto IV* (2008), in which the narrative identity built through the player’s actions is dissimilar to both the player’s (hopefully) non-criminal own identity as well as the intentions of the played character Nico Bellic, as conveyed through the game’s narrative. This lack of similarity to the narrative’s character and discrepancy relative to the player’s own identity causes discomfort with the gameplay [38].

Later research has explored different forms of identity and identification. Barker criticizes the concept of identification with on-screen characters in blockbuster movies based on a research carried out with viewers of *The Lord of the Rings* trilogy finding non-conclusive understanding of what identification really is [39]. Shaw, albeit based on research with two female individuals, claimed that identification requires that players see the video game character/avatar as separate from themselves [40]. However, she draws attention to media-specificity: “all attempts to describe identification in games must be more attentive to how specific games promote different types of connections

² ‘The mirror hypothesis’ in relation to the moving image is that viewers will tend to relate favorably to those onscreen who are either like themselves (the mirror) or who represent what the viewer would like to be like (the magic mirror).

and differences between player and avatar” [40]. In the context of Virtual Reality, where the interactor views and engages with the virtual world through the eyes and body of their avatar, the gap between the interactor and avatar is much reduced and shaped by what affordances the virtual world allows the interactor’s character to do. This closeness of bodies, of the physical with the virtual, not only allows for the embodiment of the real into the virtual [41] but also facilitates an impact of the virtual onto the real [55].

In their work, Wilt et al. explored authenticity and inauthenticity in narrative identity by having undergraduate students write descriptions of situations where they felt authentic (e.g. expressing one’s true nature, being content and relaxed, taking ownership of one’s choices, not giving in to external pressures, and having open and honest relationships) and inauthentic (e.g. being phony, conforming to others’ expectations, suppressing one’s emotions, and denigrating the self) [23]. Authenticity, thus, reflects the salience of the self-concept in one’s behavior while inauthenticity reflects the influence of the situation and audience on one’s behavior [30].

For example, in *We. The Revolution* (2019) the interactor is faced with the choice of playing a gambling dice game with high stakes in the narrative. Should the player share any propensity to gambling like the main character, they ought to find it easier - authentic - to choose the gambling choice as opposed to those who are reluctant to gamble in real life and feel inauthentic living up to the character’s gambling traits.

2.3 Identity Shift

Turkle had urged us to “[w]atch for a nascent culture of virtual reality that underscores the ways in which we construct gender and the self, the ways in which we become what we play, argue about, and build” [28].

This suggested an identity shift in computer mediated environments which refers to how communicators may become the self that is portrayed in public online contexts [and] how public online self-presentation influences individuals to embrace the traits performed in front of an audience [42].

While a study on the effect of self-identity on the VR interactor by Peña and Hill [43] did not support the phenomenon with statistically significant results, it suggests that such a shift is more pronounced in the presence of non-player characters (NPCs) and more so in the presence of other players’ avatars - as suggested by Schlenker [30] as well as Jung [27] in the psychopathological phenomenon of personality transformation when the individual becomes one of the assigned personas in front of an audience.

Gupta et al.’s shift away from the freedom of choice offered by branching narratives and choice-based AI systems towards a scripted performance may be such an exemplar [44]. They present a participatory VR theater experience where the interactor is expected to play out the role of an actor on a stage in a piece of scripted theater, rather than have the level of agency that features regularly in the work of the ICIDS community. Their findings include participants who shifted their identity to the roles they played: “*I felt like Calliope!*” and felt deep connections to her sister Minerva. The identity shift was reported in another finding: “*Beyond knowing they were Calliope, the mirror also helped them visually transform into Calliope and leave their own identity behind*” [44].

Such identification can result in the Proteus Effect, when people, in their online behavior and attitudes, conform to their avatar’s characteristics [45]. More interestingly,

if the interactor's online behavior is felt to be inauthentic (see [23] above), does it cause some identity shift of the interactor towards that inauthentic self?

In *A Way Out* (2018), the players may have put their law-abiding identity aside in order to comply with the escaped convict nature of their character. However, towards the end of the narrative, one of the characters turns out to be a covert police officer and both players are tasked to shoot at their partner in order to progress the game. For the player identifying with the newly found police officer, this role, which may well be closer to their law-abiding nature, jars against the persona that would have been developed throughout the game's narrative and makes the player feel reluctant to betray it [46].

2.4 Identification in VR

What does all this tell the author of IDNs in VR?

For starters, identification with the player character has been deemed to be a determining factor of narrative immersion [47] and video game enjoyment [48–50]. Immersion has been categorized based on sources of pleasure in games into challenge-based immersion, imaginative immersion, and sensory immersion [50]. More pertinently, imaginative immersion has been defined as the dimension “in which one becomes absorbed with the stories and the world, or begins to feel for or identify with a game character” [50]. Hefner et al. argue that this identification is facilitated when interaction is provided in a rich audiovisual representation of the game world (cf sensory immersion, [50]), that enables a sense of Presence (“a perceptual illusion of non-mediation” [51]), which is inhabited by intelligent agents that address the player (cf para-social interaction, [52]), and is backed up by narrative elements ([49]; cf [35]). Presence has been considered as the highest level of immersion [53] to the point of often being “used as synonyms to each other” [50]. Perceptual (sensory) and Psychological (engagement, engrossment - cf [53]) Immersion are presented as one of the conceptualizations of Presence [51] together with social richness, realism (also a factor of sensory immersion, [50]), transportation, and para-social interaction. Presence is highly facilitated by VR technology, which provides high levels of sensory immersion and, by its affordance of telepresence [54], accommodates the metaphor of transportation.

Meanwhile, Slater is critical of using Presence as an element of engagement and presents three illusory components [55] to clarify its definition of “being in a virtual environment” that had been given in an earlier work [56]. The first is Place Illusion, and refers to the illusion of being in a virtual environment, even though one knows that they are not. The second element is Plausability Illusion which refers to the illusion that the events happening in the virtual environment are really happening. Such realism is dependent on actions and reactions, particularly those directed at the interactor [55] but also those carried out by the interactor [57]. The third element is Body Ownership Illusion, the illusion that the virtual body is one's own body particularly as it responds to the physical body's movement as well as the interactor's reaction to actions directed towards their body, as if it was their own.

Presence is also a motivational construct in Self Determination Theory together with autonomy, relatedness and competence [58]. Autonomy provides interactors with freedom of agency as afforded by the virtual world. Relatedness refers to feeling relevant

and useful to the needs of others, as one's actions influence the state of others. Competence refers to the interactor's ability to achieve the intended outcomes, assuming clear goals and feedback are provided to help them progress towards their goal. Within this context, Presence is provided as a synonym for immersion, but the paper emphasises the interactor's agency in the virtual world as a predictor for presence [58].

We find Slater's Place Illusion in agreement with Biocca and Levy's definition used above [51]. We also think that Plausability Illusion corresponds well with Hefner et al.'s argument that a rich audiovisual representation of the game world facilitates identification [49]. Finally we see Kilteni et al.'s Body Ownership Illusion [41] as an important media-specific connection between player and avatar that facilitates identification in VR [40].

Studies found a positive correlation between, and a significant positive effect of, Presence and enjoyment within a virtual museum experience [59], VR Tourism [60] and 360 virtual tours [61]. Moreover, VR Interactive Narratives (VRINs) provide narrative elements to enrich the experience while the use of non-player characters (NPCs) to engage with the player provide social richness through parasocial interaction.

However, as VR technology blocks out the perception of the real world in favor of immersion into the virtual environment, interactors have their self-concept at a disadvantage. Presence, particularly understood as Place Illusion, may cause the interactor to feel freed from the expectations of the real world but at the same time pressured to live up to the expectations of the virtual world. Plausability Illusion, in the form of realism of the virtual environment and presentation of a virtual audience, may impinge upon their identification, potentially causing an identity shift into their virtual avatar and its characteristics. While the Body Ownership Illusion facilitates identification - the presence of the interactor in the virtual body - the attribution of the virtual body to the self may cause the mind to confuse the virtual body for its own and start living up to its expectations, particularly if it is perceived to be closer to one's ideal self [8, 45]. As Slater claims, "Virtual Reality can transform not only your sense of place, and of reality, but also the apparent properties of your own body" [55].

This identity shift is further affected by the level of freedom of choice provided in order to support the feeling of "being-in-the-world" [57]. AI-driven VRINs that provide greater freedom of choice and facilitate player-driven narrative may lead to authentic interactor experiences as the player is allowed to play in their own style. On the other hand, experiences that force an authored narrative may result in inauthentic experiences, as the interactor plays out the narrative identity expected by the situation (cf. Jung's persona) and virtual audiences - who may be virtually present, viewing through live stream, or viewing a recorded gameplay later. Hefner et al. suggest that games can have a better entertainment value if they can "evoke the perception in players that they can occupy the role they identify with successfully" [49]. Thus, inauthentic experiences that problematize identity shifts may jeopardize the quality of the experience.

3 Conceptual Model

We now present a conceptual model (see Fig. 1) which is intended to summarize the above literature and present narrative identity on a continuum from self-identity to character

identification along the dimensions of authenticity and similarity. We theorize that VR interactors who ask “who am I that acts?” may sense a deeper level of Presence (1) if they are able to shift their identity (2) to the player character (3) whose role they are expected to fulfill (4) in the virtual experience, moderated by their similarity to the character (5). This can be aided by consistent narrative elements (6) and being addressed by the virtual world’s inhabitants (9) which help construct a narrative identity (7) that may feel otherwise inauthentic to the player (8). High levels of enjoyment (10) are thus provided by identification and Presence.

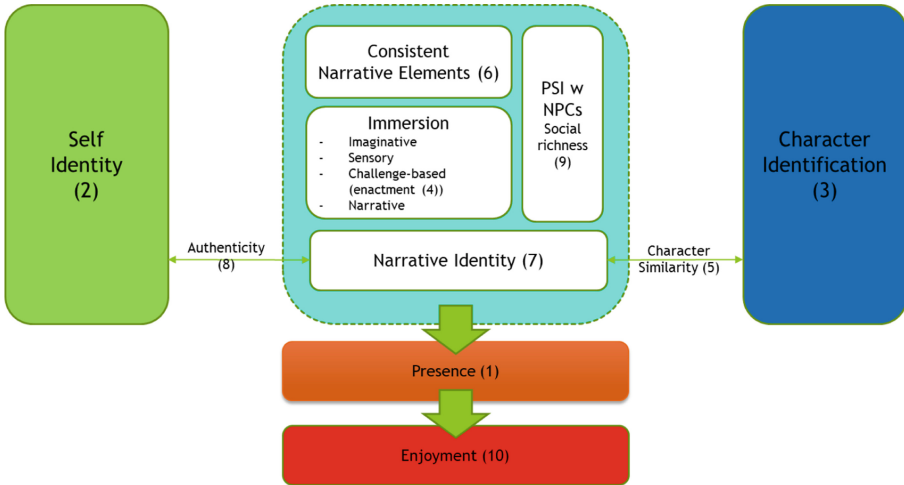


Fig. 1. Conceptual model

This conceptual model helps us situate the narrative identity created by the interactor’s agency within a VRIN on a continuum between their own self-identity and the identity attributed by the author to the played character. Depending on the distance between one’s identity and the target character’s identity, there ought to be an inverse correlation between the similarity of the narrative identity to target characterization and its authenticity to the interactor’s own identity. The greater the distance, the more inauthentic one’s narrative identity will feel as they attempt to live up to the character’s expected behavior.

This may be the expected outcome when the interactor is fulfilling a preset character persona, but may cause loss of presence, and thus enjoyment, if the interactor is led to believe that they are themselves in the virtual experience but are then forced to behave inauthentically to themselves, or are rewarded for it. An intermediate stage may occur when the interactor is not cast as a ready-made persona, but allowed to create their own character within a target storyworld. This makes it possible for the interactor to create an ideal self, relative to the given circumstances and available options, that satisfies their self-discrepancy (between their real self and their desired self). This often boils down to the customisation of the character’s aesthetics [62], which are visible when looking into a virtual mirror but also from other interactors’ reaction to one’s appearance. Identification,

however, goes beyond aesthetics and will reflect in the interaction process with the IDN where similarity to the desired self will again determine presence and enjoyment.

4 Case Studies

We shall now consider this conceptual model by applying it to six VR interactive narratives and positioning them along the dimensions of authenticity and character similarity (see Fig. 2).

The Spider-Man: Far from Home VR experience (2019) presents an interesting case study. The Spiderman narrative already has a character, Peter Parker, who identifies with a public-facing character, the Spider-Man, projecting his special abilities through the masked persona. The VR experience presents two gameplay modes. In the free play mode, the player has nothing to do with Peter Parker or his friends, and is urged to put on the mask and become Spider-Man. Through the spider-like abilities afforded by the Spider-Man, the player is able to identify with the superhero, shooting cobwebs and swinging from building to building throughout the city. Casting Spider-Man as the role model, in this game the player identifies with the character overcoming their self-discrepancy while retaining their authenticity. In the story mode, the player is expected to identify with Peter, whose voice we hear as a voice-over as he chats with his friend Ned over a digital communication platform. Putting on the mask when instructed, the player gets to look in the mirror and see themselves as the Spider-Man. Egged on by Ned, the player is tasked to stop a robotic behemoth causing mayhem in the city's streets while bringing down flying droids serving as obstacles to the task. As Ned urges Peter to hurry up repeatedly throughout the game, the player is compelled to live up to expectations of his double persona (as Peter as Spider-Man) causing identification - but with who? As the Peter Parker persona lies in between the player and the Spider-Man, but as a character they are closer to the superhero, then the player is compelled to identify with Peter as he is closer to the role model. Identifying with a well-established character results in low authenticity and low character similarity. This is also explained by Self Determination Theory [58], as the constant urging by Ned coerces the player to act as the game wants them to, thus limiting their freedom of action and thus providing limited autonomy, resulting in low authenticity.

The Book of Distance (2020) goes to great lengths to build a bond between the anonymous character played by the interactor - so much so that there's nothing stopping you from identifying as yourself, resulting in a high character similarity - and the protagonist of the story, the narrator's grandpa, Yonezo Okita. However, halfway through the narrative, you are faced by a lever with which, upon interacting with it, fences in Yonezo into an internment camp, making the player feel inauthentic to their role identified with so far in the story. Indeed, the experience was an intention of the designers to prevent any identification for the interactor [63].

In *A Fisherman's Tale* (2019), a VR puzzle where the player's character owns a scale model replica of his room complete with a little character representing himself, the triple representation of the character (because the player's character is also a scale model of a gigantic version of himself) adds distance between the player and his character, introducing an element of parasocial interaction and reducing character similarity. The

player helps the smaller character solve his puzzle, and in so doing, the gigantic character solves the puzzle for the player’s character. Such a design diminishes identification as it externalizes the persona onto the smaller and larger characters while providing medium authenticity.

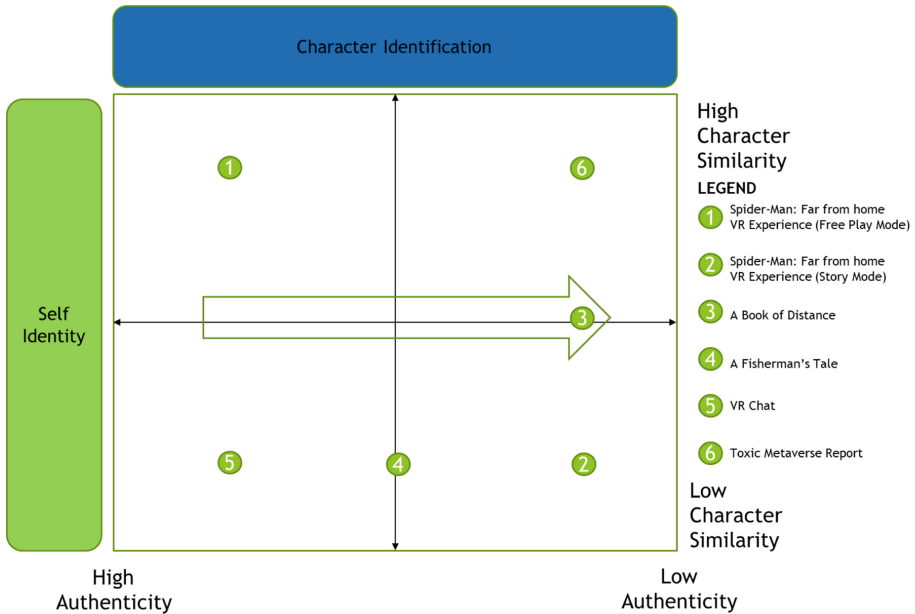


Fig. 2. Case study mapping

VRChat (2014) is an online VR social platform that allows users to embody an identity in the form of avatars. These are 3D characters over whose representation users have substantial control through its customization. While many users attempt to recreate their physical appearance on the avatar, others seek to create a representation of who they would like to be. Asshoff’s study presents an ethnographic study that reports on the experience of embodiment as reported by about 20 participants. Amongst them were participants who were able to present themselves in the gender they identified with. For individuals whose physical appearance is a source of misgendering, the avatar allows them to be seen for who they feel they really are. This presents an example that offers high authenticity even if their avatar is dissimilar to their physical self [9].

This model also gives us an opportunity to understand the sexual harassment reportedly suffered in the Metaverse [6]. The virtual character embodying the SumOfUs researcher was made to act in a manner that was neither authentic to the researcher’s own identity nor similar to the character they wished to project. While there was no physical body contact between the researcher and the perpetrator, the imagined behavior was shared by both in their physical brain and the degrading utterances of the perpetrator were heard by the auditory system of the researcher. Since there was no well-developed character being identified with by the researcher, there was high character similarity

between interactor and avatar. Moreover, due to the affordances of the virtual reality, “identification collapsed into identity” [31] and whatever was being “suffered” by the avatar was suffered by the researcher interactor, a situation in which she did not feel authentic to herself at all. Thus the danger of a shared online and offline identity is that the social structures in place in the real world are absent in the Metaverse unless we, as IDN authors, put them into place to protect from such behavior - just like attempting to flirt with the wife in *Facade* (2003) results in the player being thrown out of the apartment.

5 Guidelines

Having developed this conceptual model, and seen some of its application in a few VR experiences, we are now in a position to suggest some guidelines for future VRIN authors with respect to identification, all open to empirical confirmation to which the ICIDS community is invited. We categorize our guidelines based on who the VR author wishes the interactor to identify with.

1. A well-known established character within an established virtual world
2. An unknown established character within an established virtual world
3. A customizable character within an established virtual world
4. Themselves within an established virtual world

Having a well-known established character presents the largest distance between the interactor and the character, as the interactor will project unto the character any prior knowledge they have about them, such as that gained from other media experiences. The interactor will be expected to push their narrative identity furthest away from themselves towards the character, potentially increasing inauthenticity and diminishing the enjoyment of the experience if they fail to live up to expectations of fulfilling the role of the character. This mode will be most pertinent to VRINs within established franchises. Hence, if you have an established franchise with highly defined characters, be aware of the limited identification possible as it will be a significant challenge to provide a genuinely enjoyable VRIN experience.

Having an unknown but established character presents an easier expectation that is free from prejudice but still demanding in fulfilling whatever expectations conveyed to the interactor through the experience itself. This could be a sidekick to an established protagonist [64]. Whatever is left untold is assumed to be as close to the interactor as possible (cf “principle of minimal departure”, [65]). This may however result in inconsistencies later on in the experience as the interactor finds themselves continuously adjusting their narrative identity to remain similar to the target character, which is likely to reduce their feeling of authenticity. This choice of identification will be most fitting for new franchises expanding onto VR platforms as part of a transmedia marketing campaign. In this case, if you wish to minimize the reduction of authenticity during the experience, make sure to explain the character as fully as possible. This will help avoid having the interactor filling any knowledge gaps by projecting their own attributes onto the target character and then discovering and correcting these inaccuracies piecemeal throughout the experience.

Having a customizable character, whether based off a template character or built from scratch, allows the interactor to create a model of their ideal self, allowing them to reduce their self-discrepancy by identifying with the character. This is the category most relevant to IDNs in the envisaged Metaverse social platform, as virtual visitors will customize their character as befits the particular platform, just as we pick different profile pictures for different Web 2.0 social media platforms, like Facebook, LinkedIn, and Instagram, to present ourselves as befits the expectations. The ease of identification depends on the afforded customizability – not only in terms of form but also in terms of function. Therefore, a high level of customizability in VRINs will help achieve higher authenticity, not only in the character's appearance but also in the afforded agency. A particular challenge for platform developers is to find the right balance between high flexibility in the available functions and ethical issues, such as the provisioning of a safe virtual environment for everyone.

Having the interactor bring their own identity to the virtual world, filtered by the affordances of the technology, may still bring in issues of authenticity when such affordances limit their ability to react in line with their own physical identity. This category will be most pertinent where one's offline identity is needed for trust purposes, such as interacting with a commercial entity's VR presence and enacting financial transactions, say. If the interactor does not have sufficient trust in the platform, then they might not feel comfortable enough to fully populate their character details with their own, thus not providing an authentic representation of themselves. Thus, in situations where the interactor's real identity is expected to be represented in the virtual environment, measures should be in place to build the necessary trust for them to feel comfortable to share these details.

6 Conclusion

Identification with the player character has attracted academic interest in the past but the recent emphasis on virtual reality as a social media platform, and the potential for IDNs to become a means to provide asynchronous interaction with one's social media presence attracts renewed attention to the notion of identity in VRINs. EU regulation on digital identity and reported harassment on online platforms further warrant understanding and attention to the topic at hand.

Considering the dual identity of the interactor as avatar, while they construct their narrative identity as they interact with the VRIN, we revisit identification in terms of two dimensions: authenticity and character similarity. We interpret the construction of a narrative identity in VR as a means for identity shift between the interactor's self-identity and character identification. Based on a comprehensive theoretical framework, we presented a conceptual model for identity shift in VRINs along the aforementioned dimensions of authenticity and character similarity. We then applied the model to a number of VRIN case studies to exemplify its utility and extract some guidelines for VRIN authors in how to use this model with four different types of avatars in an established virtual world.

Further work may also consider the application of this model to non-established worlds that the interactor may create themselves. How does putting an established character into an interactor's world affect the identification along its similarity and authenticity dimensions? Are these qualities higher when an interactor's customized character, or maybe even themselves, are situated within the player's own created world?

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