

The Virtual as Personal

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Abstract

In this paper, I examine the implications of Chalmers' [2017, 2019] digital realism on personal identity, building on Floridi's [2014] *onlife* concept and supporting the idea that persons extend in biological and virtual realms. By positing the physical existence of virtual entities within computer systems, digital realism suggests a relationship between individuals and their digital counterparts akin to that between two physical entities. I argue that fourdimensionalism, which conceives of objects as composed of temporal parts, offers a robust framework for understanding this relationship. By treating virtual entities as aggregates of virtual temporal parts, this framework brings two theoretical advancements. First, we would be able to account for the apparent paradox of simultaneous existence in biological and virtual spaces. Second, by maintaining the theoretical framework of digital realism, we can provide an account of personal identity that adequately captures the increasingly intimate relationship between ourselves and our digital counterparts.

Keywords

digital realism; persistence; personal identity; temporal parts; virtual reality

1 Introduction

I am in a trench. Low on oxygen, the indicator says—just two minutes left if I do not find a replacement cartridge soon. On my left, I see a fellow soldier hit on the ground. 'Are you low on ammo?' I ask my friend Jesse. 'I'm good', he replies, his voice coming through clear despite the chaos around us. I hear the sound of battle; poison gas will be next. The

green mist is already visible in the distance, slowly creeping toward our position, and I can almost feel my throat tightening in anticipation.

I did not fight in World War I, nor have I ever been on a battlefield or, for goodness' sake, took a gun in my hand. However, the scene I described *has really happened*. Jesse and I were playing *Call of Duty*, a first-person war video game with a VR headset. We were on his couch, not on the Western Front, and more than a century after the actual World War I. Undoubtedly, the soldier I see on the screen is not, technically, me. However, it has a strong connection to me, even stronger than I might have to some of my childhood memories. While I may struggle to recall specific details of an event that occurred many years ago, or perhaps no longer fully identify with the person I was in the past, the connection I feel with my gaming avatar—the sensation of actually being on the Western Front—is vivid, present, and feels intensely “real”.

As an immersive and interactive experience, computer-generated virtual reality has increasingly become part of our everyday lives in the last few years. Virtual worlds can accurately represent the world we live in or may have different laws of nature, so to speak. There are numerous ways we experience these virtual worlds. We can use the metaverse to have meetings, shop for groceries, or use our avatars to jump hundreds of meters and survive multiple fatal wounds. Let us define ‘digital counterpart’ as any digital entity that represents or acts as us in digital contexts. Our digital counterparts can resemble human beings, non-human animals, cyborgs, or geometrical figures. They can show signs of happiness, frustration, and fatigue.

There are two main alternatives in the debate over the ontology of virtual worlds. On the one hand, Chalmers [2017, 2019, 2022] supports digital realism, *i.e.*, the thesis that virtual entities are digital entities and, therefore, grounded in structures of bits. Since bits are embodied in some physical basis (circuits, for example), virtual entities physically exist in the computer system where their virtual worlds are based. Chalmers states “that digital objects correspond to bits as physical objects correspond to atoms” ([2022: 195]).

A key aspect of this view is the nature of these digital objects, often initially described as “data structures”. Even if some critics think of data structures as abstract algorithmic types,¹ Chalmers [2019] clarifies that, while abstract data structures are one way to conceptualize digital information, the physical existence of virtual entities rests on their grounding in “physical data structures”. These are the concrete, token realizations of abstract structures

¹ Cf Ludlow [2019] and Beisbart [2019].

within physical systems—for example, specific patterns of voltages in a computer’s circuits, which are ultimately structures of bits. It is these physically instantiated digital objects that, for Chalmers, possess causal power and truly exist within the computer systems hosting virtual worlds.

On the other hand, many philosophers who address this topic support virtual fictionalism. This view does not claim that nothing exists or that what we see on the screen is a sort of illusion. Rather, it maintains that our interactions with virtual worlds involve a form of pretense—acting *as if* these entities are exactly the things they depict—or they are understood as purely fictional constructs. Mario is a fictional entity, as is the *Mushroom Kingdom* he lives in, along with the long-sleeved red shirt, the white gloves, and the red cap he wears.

The fictional alternative appears to be the appropriate metaphysical option for characters and worlds depicted in movies or books, namely depictions of different “configurations” of the world. Think of the movie *The Fellowship of the Ring* and a video game based on it. The analogy seems compelling: they both represent fictional characters engaging in fictional events in a fictional world. Frodo does not exist, and we can still see his adventure or play with his character. However, saying that Frodo does not exist does not mean that Elijah Wood is not real or that the shooting of the movie is a fictional event. The movie is (or was, if you prefer) real; it did really happen. The same dialectics goes for the video game. The character of Frodo is based on a fictional entity, but *something* happens in the video game: the code is real. When Frodo moves in the video game, something happens at the digital level.

It is this latter insight—that real events are occurring at the digital level even within fictional scenarios—that Chalmers pushes significantly further, considering role-playing games and video games:

If a human in physical reality plays the role of Gandalf casting a spell in Middle Earth, the event of Gandalf casting a spell is fictional, but the underlying bodies and movements are real. Likewise, if an avatar in virtual reality plays the role of Gollum stealing the ring, the event of Gollum stealing the ring is fictional, but this is consistent with the underlying avatars and movements within the virtual realm being real. [Chalmers 2017: 316]

In virtual reality scenarios, we engage through digital entities within digital spaces that are entirely separate from the biological world. While the ontology of video games or the relationship between users and video game characters already raises fascinating philo-

sophical questions (e.g., Declos [2024], Wildman & Woodward [2018], Ryan *et al.* [2020]), contemporary engagement with virtual reality presents an even more complex paradigm. This complexity is particularly evident in what Floridi [2014] terms the *onlife* experience, where our existence seamlessly extends across biological and virtual realms.

Consider an online meeting. We often use expressions like ‘I’m in a virtual room’ when comfortably sitting in our studio. This common way of speaking can prompt philosophical inquiry. What is the status of the individual I see on my screen, who mirrors my actions and words? If I am at my desk in my studio, is this on-screen representation a distinct entity “there” in a virtual space, perhaps something more than a mere reflection?

A fictionalist would compellingly argue that there is only one person here, and that she is located in the studio. For the fictionalist, there is just a picture of me displayed on the screen; and that picture serves as a prop for a game of make-believe (as when I say that ‘I am in the virtual room, waiting for the others to arrive’). On that view, there is no reason to think that this case involves a virtual person located in a virtual space; no more than what I see in the mirror involves a mirror person located in a mirror space. In the case of online meetings, the fictionalist response sounds in line with our everyday behavior. Yet, there are cases where providing such an answer might appear more challenging. The fundamental issue has shifted from merely understanding our navigation of virtual worlds to examining whether we are genuinely present and acting within virtual contexts, thereby bearing the consequences of our virtual equivalents’ actions. Recent theoretical analyses in digital twin technology (e.g., Braun [2021]) and personal digital avatars (e.g., Danaher & Nyholm [2024], Patrone [2025]) have highlighted the blurred boundaries between biological and virtual identity, raising new questions about the nature and extent of our digital presence. Philosophers have approached these questions through the lens of moral implications (e.g., Constantinescu *et al.* [2022]) and issues of responsibility (e.g., Sweeney [2023]), particularly regarding the autonomous actions of our digital counterparts.

In this paper, I suggest that a more foundational investigation is necessary—one that examines our ontological status within virtual worlds through the theoretical lens of personal identity. This methodological step back allows us to better understand the metaphysical groundwork underlying our virtual presence before addressing its ethical implications. I consider three interconnected theses. Starting from Floridi’s concept of ‘onlife’, I examine how persons extend across biological and virtual realms, supporting a unified understanding of personal existence that goes beyond the traditional online-offline dichotomy (§2). Building on Chalmers’ digital realism, I take that virtual entities, such as videogame characters and avatars, are real digital entities constituted by or grounded in physically existing bit

structures in computer systems (§3). Finally, I propose that four-dimensionalism, which conceives of objects as composed of temporal parts, offers the best metaphysical framework for understanding the relationship between biological persons and their digital counterparts, thereby providing a coherent framework for personal identity in our hybrid existence (§4).

2 *Onlife* persons

Since John Locke's influential *Of Identity and Diversity* [1979: Book 2, ch. 27], Western philosophical tradition has challenged the commonsensical idea that the terms 'person' and 'human being' are co-referential. Locke defines 'person' as a forensic term applied to intelligent agents capable of law, happiness, and misery, individuals who can reflect on their actions over time.

In this fashion, 'person' can be seen as a phase sortal, namely a term that applies to something during part of its existence.² We have not always been persons, and we are not sure we will continue to be throughout our lives, even if I am a person now, and you are, too.

That Lockean intuition has been profoundly influential and, aside from the classic accounts, has brought several different theories of personal identity, bound by the idea that the concept of person is ontologically different from the ones of ordinary entities, such as chairs and human beings.³ The most prominent alternative to the psychological characterization of the concept of person is animalism,⁴ formulated as the thesis according to which persons are animals or essentially animals. That is to say that conditions of personhood are linked to the biological characterization of *Homo sapiens*.

I believe that the debate about personal identity can benefit significantly from a different approach beyond the classic criteria and their issues, considering the *onlife* concept introduced by Floridi [2014]. Floridi, in the context of the "fourth revolution", presents the idea of the "infosphere":

In the infosphere, it is progressively more difficult to understand what life was like in

² This intuition, too, is from Locke (1975). Wiggins (2001: 129) examines further the concept of 'phase sortal'.

³ See, among others, Braddon-Mitchell & Miller [2004], Baker [2014].

⁴ Olson [1997, 2007]

pre-digital times and, in the near future, the very distinction between online and offline will become blurred and then disappear. [...] GPS are a good example of this convergence: asking whether you are online when driving a car while following some GPS' instructions updated in real-time is becoming progressively less meaningful. We already live mostly *onlife*. [Floridi 2011: 477]

Floridi here defines the onlife experience as life in a hyperconnected world. Since the online features of our experience are tangled with the offline ones, there is no clear demarcation between being online and offline. Besides the ethical and technological prospects, this idea gives a new perspective on the identity of persons.

This approach should be integrated in what Olson [2024] calls the “Personhood Question”—that is, what is it to be a person, as opposed to a nonperson? Traditional Lockean and neo-Lockean accounts primarily link personhood to specific psychological properties, while animalist positions ground the concept of person in that of a biological organism. However, the evolving ways we engage in relationships with past selves and with others, and manage our concerns for future selves, seem to necessitate an ontological characterization of persons that accounts for what we do, how we relate, and *who we are* online. This suggests that a comprehensive understanding of personhood may need to integrate our digital counterparts, rather than viewing them as merely passive reflections of ourselves, like static images in a mirror.

It is hard to challenge the intuition that our online behavior affects our offline life. To rephrase the famous Clark and Chalmers' [1998] motto, our responsibility, like our mind, does not stop at biological barriers. According to the classical Lockean characterization of personhood, being a rational, conscious subject and object of intentions and desires makes me a responsible agent.⁵ The extension of personality to virtual aspects entails the extension of responsibility, both legally and philosophically—and indeed, some argue that it is the very extension of responsibility to our online deeds that can, in turn, warrant the extension of personhood to digital selves (e.g., Constantinescu *et al.* [2022], Sweeney [2023], Karpus & Strasser [2025]). Not all living beings and not all human beings can be considered responsible. The blame for an event, whether in jurisprudence or personal identity, can be

⁵ ‘Person’, I take it, is the name for this self. Wherever you find what you call ‘myself’, anyone else may say there is ‘the same person’. ‘Person’ is a forensic term, having to do with actions and their merit; and so it applies only to active thinking beings that are capable of a law, and of happiness and misery (Locke [1799: 335]).

attributed to those who can be held accountable for their actions, and that is precisely the characterization of ‘person’ as a “forensic term”, in Locke’s words.

For our purposes, we can distinguish between two types of digital counterparts. The first category encompasses traditional video game characters and avatars on platforms like Second Life, Fortnite, or the metaverse. While representing users in virtual environments, these entities are not autonomous—their actions and experiences remain directly controlled by and intrinsically bound to their users’ real-time inputs. The second category consists of what Sweeney [2023] calls “Autonomous Advanced Avatars”—sophisticated digital agents capable of independent operation through AI-driven systems. These avatars can make decisions and engage in interactions without continuous user supervision, drawing from extensive datasets of personal information to simulate their human counterparts’ behavioral patterns. Both types of digital counterparts raise the same theoretical question about the relationship between biological persons and their digital representations. The core philosophical issue of how to conceptualize the connection between a biological person and their digital counterpart remains central, regardless of whether the avatar operates through direct user control or moves autonomously in virtual contexts.

Digital counterparts profoundly impact us, even the actions and experiences that make us persons. If my avatar in the Metaverse interacts with my best friend’s avatar, *I* interact with my best friend’s avatar and, consequently, with her. This unique relationship between digital counterparts and their users, where the actions of one are mirrored by the other, changes the conceptual boundaries of personhood, possibly posing a challenge to the role of classical views, like the psychological and the physical criteria of personal identity. Digital and biological worlds become one in immersive virtual contexts while our experience suddenly changes. Moreover, *we are* often in two places at once: we drink coffee in our living room while giving a talk on Zoom, being both *here* and *there*. These experiences highlight a puzzle about our digital existence. What is the precise nature of our relationship with, and presence through, our digital counterparts? It seems absurd (and undesirable!) to consider ourselves strictly identical to, say, our avatars.

Among other very plausible considerations, this seems to violate the fundamental principle that a single entity cannot be in two distinct places at once. However, this issue gains complexity when we consider scenarios where our digital counterparts act as significant extensions of our agency, effectively taking actions for us and operate with a degree of independence while *representing* us. Such capabilities create a tension: while we are not numerically identical to these digital representations, our agency and perceived presence are extended into the virtual realm through them. I believe that this requires a

deeper understanding of our true relationship with these digital counterparts.

To look into this matter may involve exploring the ontological status of our digital lives. For instance, one possible line of inquiry draws from fictionalist theories. If our digital counterparts are considered akin to fictional entities, and therefore not “real” in the same sense as our biological bodies, the apparent “co-location problem” discussed above might be reframed or even dissolved. In such a characterization, there would be no single entity co-located in two distinct places. This, then, shifts the focus from a strict identity claim to understanding the nature of this extended, perhaps fictional, agency.

However, I believe there are several good reasons to refuse the identification of the virtual with fiction. The most prominent is that virtual entities have a relevant causal power (Chalmers [2017, 2019, 2022: 110–1]). Chalmers argues that the causal power of virtual objects is grounded on the fact that digital objects are the objects with the relevant causal powers, so virtual objects are digital objects, hence real objects.⁶ Sherlock Holmes has a great causal power in Conan Doyle’s fiction but has no direct causal role in our world.

On the contrary, if my digital counterpart in the metaverse buys a fridge in a virtual store, I will have a new fridge in my kitchen in a few days. It can be argued that not all virtual entities have this causal interaction with the non-virtual world. Virtual soccer players in an offline video game cannot interact with entities in the non-virtual world. However, as soon as the video game goes online, offline mixing with online, it becomes almost impossible to confine causal interaction to the virtual alone. This is precisely what the onlife framework describes.

Therefore, dismissing virtual entities as mere fictions due to their non-biological nature seems insufficient, given their real causal impact and integration into our lives—and it is this integration that challenges traditional views of personhood. While animalism, tying personal identity strictly to the biological organism, seems unable to accommodate actions performed by distinct virtual avatars, psychological continuity theories seem more promising. They can recognize the same psychological subject operating across biological and virtual domains.

However, a deeper ontological question persists even for psychological views: How do we precisely characterize the relationship between the biological person and their digital counterparts, especially as these avatars gain autonomy? If the same psychological continuity

⁶ McDowell & Wildman [2019] reject this idea on the grounds that users have causal powers too. A reply by Chalmers can be found in Chalmers [2019: 470].

underlies both, what is the ontological status of the digital counterpart as distinct from the biological person? Simply stating that they share psychological traits does not fully resolve the metaphysical challenge of having a digital entity acting for the biological one. Addressing this ambiguity—clarifying the ontology of this “hybrid” existence where our psychology extends through digital counterparts—requires further investigation, which the subsequent sections will undertake by discussing digital realism and exploring a four-dimensionalist framework.

3 The virtual as the digital

In the previous section, I have argued that personal identity extends into an onlife experience encompassing both biological and virtual realms. This section turns to the ontological status of the virtual entities central to this experience. I adopt Chalmers’ digital realism to support the thesis that virtual objects, including our digital counterparts, are *real* digital objects grounded in data structures.

Chalmers [2017, 2022] argues in favor of a thesis called ‘virtual digitalism’. In its simplest form, virtual digitalism asserts that virtual objects and events are fundamentally digital. Digital objects might be considered data structures grounded in computational processes. However, this characterization invited discussion. Ludlow [2019] and Beisbart [2019] pointed out that data structures are often conceived as abstract types, lacking clear physical location or direct causal powers. In response to such critiques, Chalmers [2019: 460–6] distinguishes between abstract data structures (e.g., an “array” as a type) and what he terms “physical data structures” (or “concrete data structures”). The latter are the specific, physical realizations of those abstract structures in a concrete computational system—for instance, an array of bits realized as particular voltage levels in a set of memory cells. Chalmers emphasizes that these physical data structures, the concrete instantiations, have causal powers and constitute the digital objects that ground virtual reality. Thus, for Chalmers, virtual objects are not abstract; they are genuine entities, physically realized as these concrete digital structures, capable of interacting with and affecting users and other virtual entities within their environments.

Chalmers, as a “first approximation”, suggests that digital objects “can be regarded as data structures” ([2017: 317]). This might indicate that digital entities *are* data structures. However, he refines this in his “second-approximation view” ([2019: 454]) and subsequently a “third-approximation to virtual digitalism” ([2019: 455]). In these latter characterizations, virtual objects are characterized as “broadly digital objects” that are grounded in (or consti-

tuted by) a combination of data structures and mental objects and properties, such as user perceptions, interactions, and attitudes.⁷

The foundational data structures, which serve as the digital basis for virtual objects, are themselves understood to be grounded in computational processes. These computational processes, in turn, are grounded in physical processes that occur on one or more computers (Chalmers [2017: 317]). From this perspective, virtual objects emerge as real digital objects whose existence and properties are ultimately grounded in physical computational processes. Chalmers' central assertion is that they are real digital objects, distinct from being fictional or purely illusory, and their reality is compatible with their digital and partially mind-dependent nature.

For Chalmers, the fact that a virtual object possesses a determinate form, specifiable dimensions, and interacts consistently with other virtual entities according to the programmed rules of its environment is not merely a superficial resemblance to physical objects. Rather, within virtual digitalism, these properties are understood as manifestations of the virtual object's underlying status as a real digital object.

Chalmers believes that what I term 'digital counterparts', as virtual objects, are digital objects. As digital objects, they are real objects. Hence, the relation between my avatar and me is between two physical entities, one made of bits, the other made of flesh and bones. However, Chalmers' virtual digitalism has faced several significant criticisms. The first major challenge comes from the ontological status of virtual objects themselves. Beisbart [2019] and Ludlow [2019], for example, raise questions about the relation between virtual objects and data structures.⁸ Specifically, Ludlow points to social virtual entities, arguing that they cannot be fully reduced to computational data structures because of their inherently social nature. This argument would threaten the idea that all virtual objects are simply digital objects. He contends that virtual "physical" objects like tables and sushi are socially determined entities whose existence and identity depend on social consensus rather than being identical to their underlying data structures. Crucially, Ludlow does not deny the reality or causal efficacy of these virtual entities; rather, he challenges the notion that they can be fully equated with digital structures. He argues that their identity as specific kinds of objects is socially conferred and can be quite independent of data structures, since "the

⁷ Chalmers [2019:455–6, 458].

⁸ Furthermore, Beisbart raises concerns about an unreasonable proliferation of digital objects under Chalmers' view.

virtual objects [...] are more fundamental than the computational [data] structures”.⁹

While acknowledging the force of Ludlow’s social ontology of virtual objects, I suggest that his perspective can be integrated with Chalmers’ digital realism rather than seen as a complete refutation. The social determination of what virtual objects are (their kind or classification) can coexist with their underlying digital constitution. The key distinction lies between a virtual object’s socially defined identity and function, and its material (digital) realization. Social consensus confers specific identities onto digital structures, making them “virtual tables” or “virtual avatars,” but this social nature does not negate the digital one. Importantly, Ludlow’s argument that virtual objects are social objects can be applied, *mutatis mutandis*, to non-virtual objects as well, strengthening the parallel between virtual and non-virtual ontology.¹⁰

McDonnell & Wildman [2019] present perhaps the most systematic critique, distinguishing between strong virtual digitalism (identifying virtual objects with digital objects) and weak virtual digitalism (virtual objects as dependent on but distinct from digital objects). They argue that both versions face significant problems: the strong version encounters a “cross-play problem” where users interact with virtual objects that cannot be identical to any single digital object, while the weak version struggles with pseudo-causation and causal exclusion issues.

However, while important for the broader debate about virtual realism, these criticisms do not significantly impact the framework proposed in this paper. Whether virtual objects are strictly identical to digital objects (strong digitalism) or merely grounded in them (weak digitalism) or “broadly” digital objects, the key insight remains: they are, so to speak, “real enough” to constitute genuine parts of our extended personal identity.

4 Virtual temporal parts

Building on the argument that virtual entities are real digital objects, the primary aim of this section is to introduce and defend the concept of “virtual temporal parts”. Within this framework, I aim to show that persons can be understood as fusions of both biological and

⁹ Ludlow [2019: 349].

¹⁰ As noted by Ludlow himself: “There is also a view out there (sometimes associated with Hegel perhaps) that physical objects too are fundamentally social. That view seems like a stretch for real life chairs and sushi, but I would rather remain neutral on this view as well” ([365]).

virtual temporal parts, thus offering a coherent metaphysical solution to our hybrid *onlife* existence.

Ludlow addresses the case of objects that exist simultaneously in virtual and non-virtual worlds. He discusses mixed media events like concerts that take place “partly in Second Life and partly at a concert stage in RW [Real World]”.¹¹ When asking “[w]here is the concert?”, Ludlow suggests that “it is in both places”. Consider an online university called “Hybrid Uni”. This institution comprises purely virtual components (such as online classes and course selection software), non-virtual elements (like the physical administration office), and hybrid components (such as seminars conducted both online and in-person).¹² Like Ludlow’s concert example, Hybrid Uni cannot be reduced to what Chalmers calls “data structure”—it is neither purely virtual nor purely non-virtual. Instead, it exemplifies what I term a “mixed *onlife* object”: an aggregate entity composed of non-virtual parts (desks and chairs), virtual parts (software), and blended components that exist across both domains. This example supports the idea that hybrid objects are not problematic for a supporter of digital realism. Just as a concert can exist simultaneously across virtual and non-virtual spaces while maintaining its unity as an event, other hybrid entities can be grounded in multiple domains without compromising their ontological status.

The ontological status of these hybrid *onlife* objects, particularly the notion that they can be composite entities with parts scattered across biological and digital spaces, may be criticized, particularly from the perspective of a conservative ontology which posits that only ordinary objects exist and does not take into account non-ordinary ones like scattered persons.¹³ However, the thesis of entities as potentially disconnected or scattered objects is not as counterintuitive as it might first appear. We can think of cases where a person might have disconnected parts (a severed finger that is, at a later time, surgically reattached, for example), just as we accept without problem scattered objects in our ontology (e.g., the *Lord of the Rings* trilogy, which includes three books, one of which might be at my house, another forgotten on the bus, and the third lent to a friend). Thus, while acknowledging that fictionalist interpretations of such hybrid structures are possible, the proposed framework argues that mixed *onlife* objects are genuine, albeit uncommon and potentially scattered.

¹¹ Ludlow [2019: 348].

¹² Indeed, a seminar conducted both online and in-person can be considered a ‘mixed event’, illustrating a similar hybridity.

¹³ Cf Korman & Barker [2025: §1.1].

In this vein, I argue that persons are like Hybrid Uni, namely, fusions of virtual and non-virtual parts that extend both in virtual and non-virtual worlds. The ontological perspective adopted here is that of the metaphysics of four-dimensionalism, which conceptualizes persisting objects as “spacetime worms” composed of temporal parts (or stages). From this viewpoint, the emergence of virtual environments expanded the types of temporal parts that could constitute a person, allowing the fusions comprising some individuals to extend into the virtual realm by incorporating virtual temporal parts alongside their non-virtual ones.¹⁴

The concept of temporal parts provides a powerful framework for understanding how persons persist. Just as objects extend through space by virtue of their spatial parts, they extend through time by virtue of their temporal parts. Hence, an entity is a temporally extended whole composed of different temporal parts. When we apply this to persons, each moment of our existence is a temporal part of us. Just as my hand and foot are different spatial parts of me existing in different locations, my childhood self and my present self are different temporal parts of me existing at different times. This framework helps explain how we can have different, even incompatible, properties at different times without logical contradiction. Just as it is not contradictory for my hand to be warm while my foot is cold, it is not contradictory for me to be happy yesterday and sad today—these are simply different temporal parts with different properties.

A four-dimensional characterization of persons is clearly expressed by Lewis, according to whom «a continuant person is an aggregate of person-stages, each one I-related to all the rest (and to itself)” ([1983: 59]), where the I-relation is the relation between the several stages of a single continuant person.¹⁵ An alternative four-dimensionalist perspective, notably advanced by stage theorists such as Sider [2001] or Hawley [2001], suggests that no distinct unifying relation is needed beyond the criterion of personal identity, such as psychological continuity. Stage theorists apply counterpart theory directly to persistence through time. They argue that entities like persons are instantaneous stages that persist by

¹⁴ This mirrors how technology often enables extensions without fundamentally changing core concepts. Take the example of physical libraries: since the digital era began, they have gained a virtual counterpart (digital archives). Similarly, persons, understood as fusions of temporal parts, can now extend their existence through virtual parts.

¹⁵ Both Lewis and Parfit [1976, 1984] maintain that the criterion of personal identity coincides with the R-relation, namely a relation of mental continuity and connectedness. My framework remains neutral as to which criterion of personal identity to adopt.

having later stages as their appropriate temporal counterparts, connected by the relevant personal identity persistence relation.

In the context of my discussion, both the Lewisian and the stage theory approaches can, in principle, be applied to accommodate the idea of virtual temporal parts as proper parts of a hybrid person. While stage theory might offer advantages in addressing scenarios, such as certain branching cases,¹⁶ it arguably carries a greater metaphysical burden.¹⁷ For the present purposes, however, it is not necessary to definitively commit to one specific version over the other. Both approaches provide a viable metaphysical foundation for evaluating personal identity in the context of digital realism by allowing for persons to be hybrid entities.

Extending the four-dimensional framework to include our digital counterparts allows us to understand persons as entities that persist through time, space, and virtual environments. Hence, persons would be hybrid aggregates whose stages are connected through both biological and virtual continuity. For “virtual continuity”, we can suppose a relation, akin to Lewis’s I-relation, tying together the virtual temporal parts of a single digital counterpart.¹⁸ More crucial is the relation connecting these virtual parts to the non-virtual temporal parts of the hybrid person. Indeed, if our digital counterparts are *real* entities and not merely props for a make-believe, this raises the question of what connects the biological individual to these entities. It seems we cannot appeal to a criterion of physical continuity, as we are made of flesh and blood while our avatars, in Chalmers’ view, are arguably made of bits.

At a closer look, it would seem difficult to argue that a digital counterpart is a person in the Lockean sense expressed in §2. In fact, a digital counterpart cannot be called an intelligent agent, morally responsible, or someone who can think of itself as the same thinking thing—except perhaps in a very weak sense that likely falls outside the scope of a Lockean characterization. Yet, following Karpus & Strasser [2025], we can conceive our digital replicas as possessing “what matters for our survival”, meaning they maintain a psychological connection and continuity with our biological selves sufficient to preserve personal identity.

The idea that what matters for personal identity is also maintained in the relationship

¹⁶ See Merricks [2022: § 3:III].

¹⁷ For a detailed discussion, see Sider [2001].

¹⁸ For a proposal, see Patrone [2025].

between a biological individual and a digital entity certainly requires a revision of our commonsensical intuitions about personal identity, in the vein of Parfit's [1984] "identity doesn't matter" view. While a full account is beyond this paper's scope, it is interesting to note that this Parfitian intuition has been linked to the metaphysics of temporal parts,¹⁹ in the sense that a four-dimensionalist metaphysics would support the idea that it is not identity that matters for our personal survival (as temporal parts are not numerically identical to each other) but rather the relation between them, even if not accompanied by identity. We are not identical to our digital counterparts, yet we maintain a relationship with them that can, theoretically, support a sort of *personal continuity*.

My claim is that in the context of digital realism, it is reasonable to support the idea that, just as persons have temporal parts existing at different times, they also might have virtual parts existing at different times in different virtual environments. These virtual parts are not mere representations or simulations but genuine parts of the person, analogous to how temporal parts are genuine parts of the temporally extended person. This framework allows us to explain, from a digital realist position, the feeling of "being there" while playing an immersive VR game, without being committed to the undesirable thesis that we are identical to our avatars.

Persons in an *onlife* framework are mereological fusions of non-virtual and virtual temporal parts. The relationship between me here, sitting in front of my computer, and my digital counterpart in a digital environment becomes analogous to the relationship between me in this very moment and my past self the moment I woke up the day of my 10th birthday. In this respect, persons are hybrid aggregates whose temporal parts are partly located in virtual and non-virtual worlds. This way, we can rethink the characterization of the relationship between us and our digital counterparts in terms of a relation between "temporal parts". If persons are aggregates of virtual and non-virtual temporal parts, then there would not be an entity simultaneously co-located, but rather two temporal parts (one virtual and one non-virtual) existing at the same time.²⁰ It would be as unproblematic as the fact that a bikini can be in two places at once: the top on the bed and the bottom in the washing machine.

Saying that a person persists across virtual environments means that that person has

¹⁹ Cf Merricks [2022: 71–5] and Patrone [2017].

²⁰ See Hawley [2024] for an extended overview of how accepting temporal parts helps solve classical metaphysical problems, such as coincidence, vagueness, etc.

temporal parts in those virtual environments. The specific conditions for this persistence will depend on the chosen metaphysical criterion of personal identity. For example, if one adopts a Lockean criterion, persistence in and across virtual worlds would be defined by the appropriate psychological connections and continuity linking the various temporal parts—be they biological or virtual.

This framework does not entail that every person must have virtual and non-virtual temporal parts at all times. Rather, it suggests that a person *may* have virtual parts in addition to their non-virtual parts. A person possesses a virtual temporal part in a virtual world if they have a digital counterpart in that world at that time, much like one has a temporal part in London at a specific time only if one is in London at that time. Consequently, the adoption of temporal parts allows for the contemporaneous existence of a virtual temporal part (e.g., an avatar interacting in virtual world) and a non-virtual temporal part (e.g., the biological organism at the computer). This approach is analogous to how four-dimensionalism resolves paradoxes such as those of persistence or composition (as the solution to the fission case in Lewis [1976]) by explaining the co-location in terms of possession of temporal parts.²¹

5 Conclusion

Asserting that virtual entities are as real as biological entities presents the challenge of explaining the relationship between these entities and *us*. We surely are not numerically identical to our digital counterparts. However, I have claimed that the relationship between us and our digital counterparts requires further analysis. I have argued that the most viable approach is to examine it in terms of a counterpart relation between non-virtual and virtual parts. My argument takes four-dimensionalism, extended to include virtual temporal parts, to provide an adequate framework for understanding personal identity within digital realism. I propose to conceive virtual entities as composed of temporal parts existing in a virtual world. Thus, the relationship between me sitting in front of my computer and my digital counterpart in a digital environment becomes analogous to the relationship between my present self and my past self. In both cases, we have a relation between two temporal parts, though in the virtual case, one part is biological and the other virtual, rather than

²¹ Similarly, “virtual continuity”—the continuity of a person’s virtual temporal parts—can also be determined by the chosen criterion of persistence.

both being biological parts at different times.

My present analysis has primarily addressed the fundamental ontological status of our digital counterparts; however, the possible implications of this view extend further. The hypothesis of considering our digital counterparts as fusions of virtual temporal parts does not necessarily take a definitive stance on the possible criteria for diachronic identity in hybrid persons. A primary and evident avenue for future research, therefore, would be to examine various criteria of personal identity within this framework and to assess whether these criteria can provide insightful answers to several emerging questions. In this light, we can investigate the possibility of being connected with multiple digital counterparts simultaneously, effectively being present in more than one virtual world at the same time.

Another extremely interesting avenue is the investigation of a potential hierarchy between the temporal parts of such a hybrid person: are the non-virtual temporal parts “more fundamental” than the virtual ones? Could we survive solely with our virtual temporal parts? Addressing these questions opens up interesting and potentially fruitful theoretical investigations into what we might term “virtual personal identity”.²²

I have claimed that this theoretical framework helps us better understand the phenomenon of onlife existence that Floridi describes. Rather than seeing our virtual presence as separate from or secondary to our biological self, we can understand it as another dimension of our personal identity, integrated with but distinct from our biological person. Adopting Chalmers’ digital realism and extending the four-dimensionalist approach to include virtual parts, we obtain a theoretical framework that captures the hybrid nature of our lives.

The idea aligns with Parfit’s [1984: §3] “identity does not matter view”, according to which personal identity does not matter for our survival as persons. Parfit argues that important questions regarding survival, memory, and responsibility do presuppose a question about whether we are numerically identical to our past or future selves. However, he claims it is reasonable to free the debate of personal identity from this presupposition. Hence, the question about identity is of no importance.

We are not identical to our digital counterparts; however, in Parfit’s terminology, this does not imply that they might still possess what matters in survival. Just like I can be both in the kitchen and the living room, if I am standing by the door with one foot in the kitchen and the other in the living room, I can be both at my desk and in the metaverse. Just like I

²² I thank an anonymous reviewer for suggesting these possible future lines of research.

was 1 meter tall as a child and 1.75 right now, I can be a human being made of flesh here on planet Earth and an avatar made of bits in virtual reality. And I am there in both cases.

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